CHAPTER 28

DRAGNET NUMERICAL REASONING

Dragnet's GSE Numerical Reasoning Test comprises 20 questions, and you will have 17 minutes in which to correctly answer as many as you can. Calculators are permitted for this test, and it is recommended you have some rough paper to work on.

The test comprises five sets of charts with four questions to be solved under each. You will have to work quickly and accurately to perform well in this test. If you don't know the answer to a question, leave it and come back to it if you have time. Each question will have five possible answers, one of which is correct. You may click Back and Next during the test to review or skip questions.

You can submit your test at any time. If the time limit is up before you click submit, the test will automatically be submitted with the answers you have selected. It is recommended to keep working until the time limit is up.

Passing Dragnet GSE Numerical Reasoning Test is not based on your mathematical ability in school, it is simply by practicing the GSE Numerical Reasoning Test questions and getting accustomed to the test format. Over 95% of the candidates who fail dragnet's tests did not do enough practice - Don't be one of them!

Numerical Reasoning
Free Test

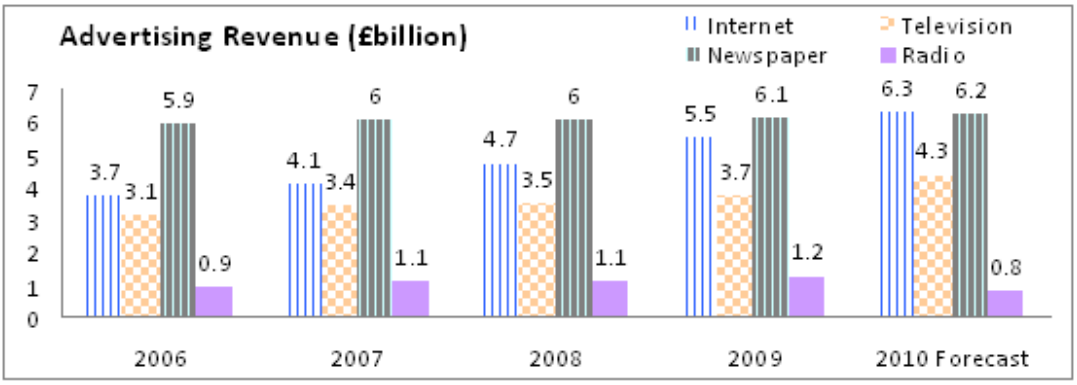
Question Booklet
Difficulty rating: Hard

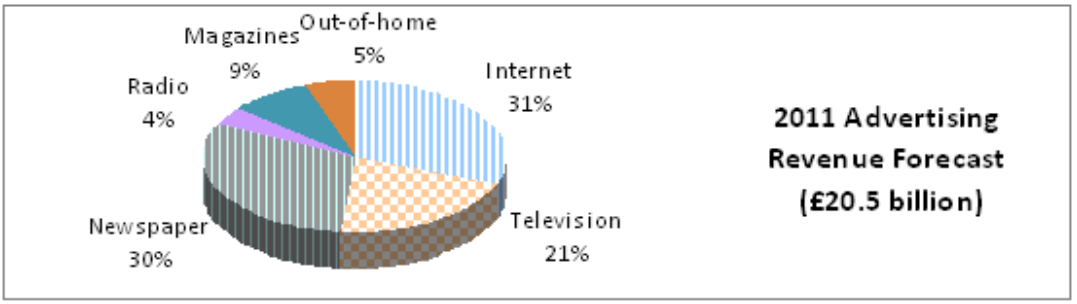
This free numerical reasoning test comprises 8 questions, and you will have 7 minutes in which to correctly answer as many as you can. Calculators are permitted for this test, and it is recommended you have some rough paper to work on.

You will have to work quickly and accurately to perform well in this test. If you don't know the answer to a question, leave it and come back to it if you have time. Each question will have four possible answers, one of which is correct. You may click Back and Next during the test to review or skip questions.

You can submit your test at any time. If the time limit is up before you click submit the test will automatically be submitted with the answers you have selected. It is recommended to keep working until the time limit is up.

Try to find a time and place where you will not be interrupted during the test. When you are ready, begin the test.





Q1 Which of the following two media are predicted together to generate £6.15 billion of advertising revenue in 2011?

(A) Television and Radio
(B) Newspaper and Radio
(C) Out-of-home and Newspaper
(D) Radio and Magazines
(E) Magazines and Television

Q2 If the Internet advertising forecast for 2011 is expected to split into mobile: display advertising in a 1:4 ratio, what is the mobile forecast?

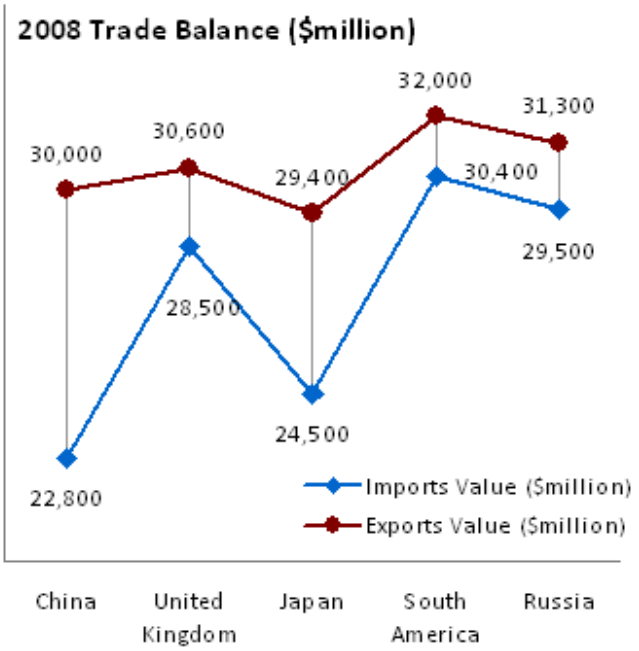
(A) £20.5 billion
(B) £1.55 billion
(C) £1.27 billion
(D) £31.00 billion
(E) £7.75 billion

Q3 If the same absolute trends in advertising revenue from 2009 to 2010 continue for 2010 to 2011, then what will be the 2011 advertising revenue for Television and Internet combined?

(A) £8.1 billion
(B) £16.2 billion
(C) £21.2 billion
(D) £12 billion
(E) £10.6 billion

Q4 If in 2009 an external market force had reduced the year's advertising revenue from Newspapers by 10% and from the Internet by 20%, then what was the total 2009 advertising revenue?

(A) None of these
(B) £9.89 billion
(C) £11.6 billion
(D) £10.44 billion
(E) £14.79 billion



2009 Trade Balance*

	Value ($ million)
China	18,400
United Kingdom	1,825
Japan	5,840
South America	1,950
Russia	1,200

* Trade balance = (Exports Value) – (Imports Value)

Q5 Of the regions shown what was the difference between the highest and the lowest trade balance in 2008?

(A) None of these
(B) $5,100 million
(C) $510 million
(D) $5,400 million
(E) $5,600 million

Q6 If Japan's exports value increased by 1/5th between 2008 to 2009 then what was Japan's imports value in 2009?

(A) Cannot Say
(B) $29,40 million
(C) $23,560 million
(D) $25,560 million
(E) $29,440 million

Q7 Compared to 2009, the UK's trade balance is expected to increase by 3.5% in 2010 and China's trading balance is expected to decrease by 4.4%. What is the difference between the 2010 trade balance forecasts for these countries (to the nearest $million)?

(A)$14,405million
(B)$15,000million
(C)$16,000million
(D)$15,702million
(E) $17,000million

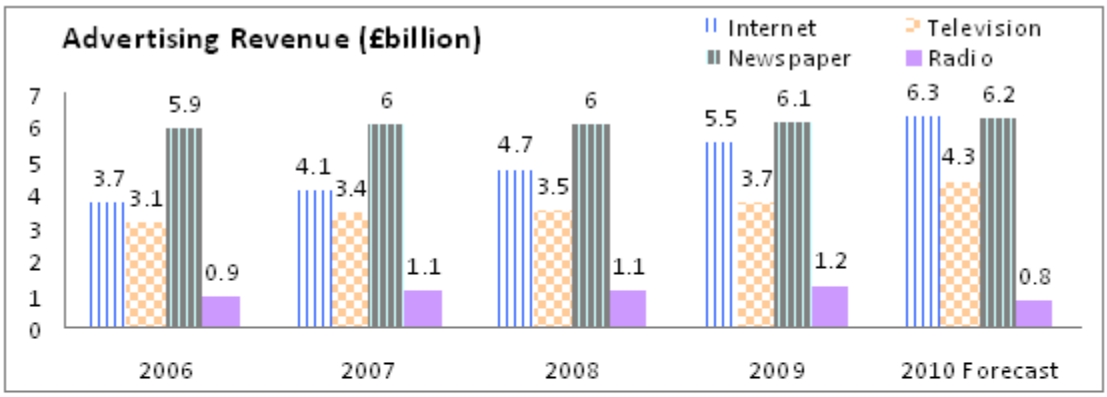
Q8 Which region or regions have experienced a decrease in their trade balance between 2008 and 2009?

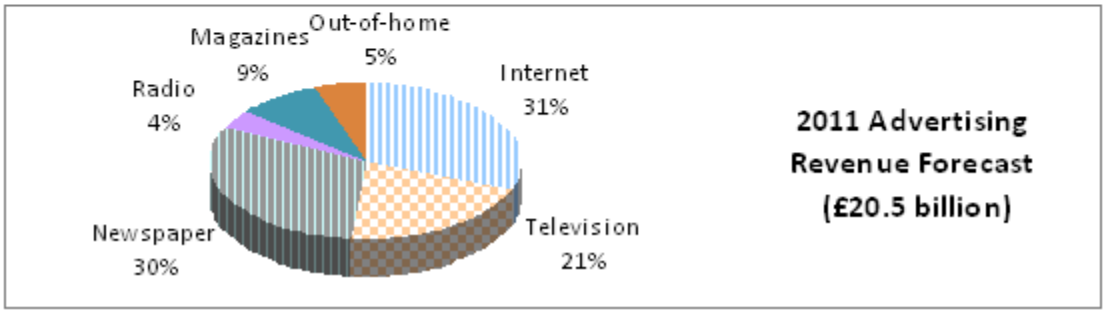
(A) South America, United Kingdom
(B) United Kingdom, Russia
(C) South America, Russia
(D) South America
(E) Russia

DRAGNET

Numerical Reasoning
Free Test

Solution Booklet





Q1 Which of the following two media are predicted together to generate £6.15 billion of advertising revenue in 2011?

(A) Television and Radio
(B) Newspaper and Radio
(C) Out-of-home and Newspaper
(D) Radio and Magazines
(E) Magazines and Television

Step 1 - Calculate the 2011 advertising revenue using the pie-chart data, look for the combinations which add up to 6.15

Television	***21% x £20.5 billion = 4.305***
Newspaper	*30% x £20.5 billion = 6.15*
Out-of-home	*5% x £20.5 billion = 1.025*
Radio	*4% x £20.5 billion = 0.82*
Magazines	***9% x £20.5 billion = 1.845***

So the correct answer is (E) Magazines and Television

Q2 If the Internet advertising forecast for 2011 is expected to split into mobile: display advertising in a 1:4 ratio, what is the mobile forecast?

(A) £20.5 billion
(B) £1.55 billion
(C) £1.27 billion
(D) £31.00 billion
(E) £7.75 billion

The information that you need is shown in the pie-chart
Step 1 – calculate the Internet advertising forecast for 2011
31% x £20.5 billion = £6.355 billion

Step 2 – apply the ratio
1:4, so mobile = 1/5th of £6.335 billion = £1.27 billion

So the correct answer is (C) £1.27 billion

Q3 If the same absolute trends in advertising revenue from 2009 to 2010 continue for 2010 to 2011, then what will be the 2011 advertising revenue for Television and Internet combined?

(A) £8.1 billion
(B) £16.2 billion
(C) £21.2 billion
(D) £12 billion
(E) £10.6 billion

Step 1 – calculate the 2009-2010 change in Television and Internet combined
Television: 4.3 – 3.7 = 0.6 increase
Internet: 6.3 – 5.5 = 0.8 increase
Television and Internet combined = 1.4 increase

Step 2 – apply the same change to the 2010 total for Television and Internet combined
6.3 + 4.3 +1.4 = 12

Thus the correct answer is (D) £12 billion

Q4 If in 2009 an external market force had reduced the year's advertising revenue from Newspapers by 10% and from the Internet by 20%, then what was the total 2009 advertising revenue?

(A) None of these

(B) £9.89 billion

(C) £11.6 billion

(D) £10.44 billion

(E) £14.79 billion

Step 1 – calculate the adjusted Newspaper revenue

6.1 x 90% = 5.49

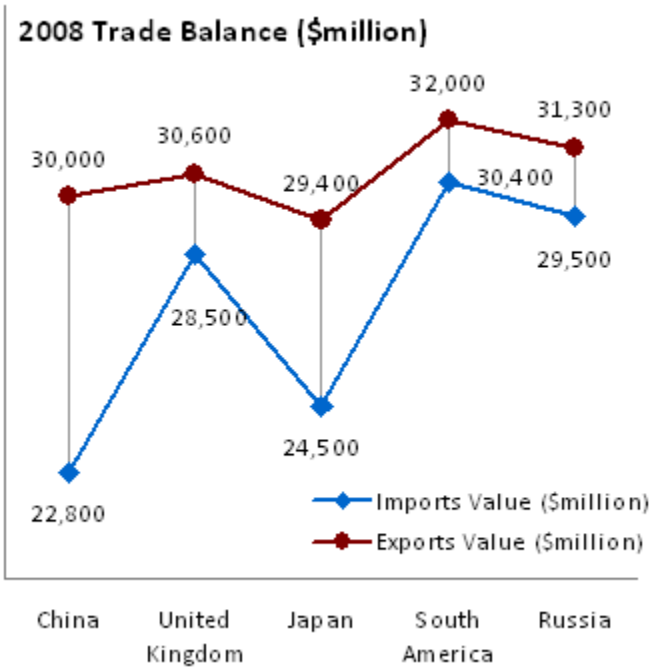
Step 2 – calculate the adjusted Internet revenue

5.5 x 80% = 4.4

Step 3 – calculate the adjusted total 2009 advertising revenue

5.49 + 4.4 + 3.7 (television) + 1.2 (radio) = 14.79

So the correct answer is (E) £14.79 billion



2009 Trade Balance*	
	Value ($ million)
China	18,400
United Kingdom	1,825
Japan	5,840
South America	1,950
Russia	1,200

* Trade balance = (Exports Value) – (Imports Value)

Q5 Of the regions shown what was the difference between the highest and the lowest trade balance in 2008?

(A) None of these
(B) $5,100 million
(C) $510 million
(D) $5,400 million
(E) $5,600 million

Step 1 - Use the graph (i.e. 2008 figures) to calculate the trading balance (exports – imports) for each region

	Exports – imports ($million)
China	*30,000 – 22,800 = 7,200*
United Kingdom	*30,600 – 28,500 = 2,100*
Japan	*29,400 – 24,500 = 4,900*
South America	*32,000 – 30,400 = 1,600*
Russia	*31,300 – 29,500 = 1,800*

Step 2 – calculate the difference between the highest and the lowest trading balance
7,200 – 1,600 = $5,600 million

So the correct answer is (E) $5,600 million

Q6 If Japan's exports value increased by 1/5th between 2008 to 2009 then what was Japan's imports value in 2009?

(A) Cannot Say
(B) $29,400 million
(C) $23,560 million
(D) $25,560 million
(E) $29,440 million

Step 1- Use the graph to obtain the 2008 exports value = 29,400

Step 2 – Add 1/5th to find the 2009 exports value
29,400 x 1.2 = 35,280

Step 3 - Use the table to obtain the 2009 trade balance = 5,840
Japan's imports value in 2009 = 35,280 – 5,840 = $29,440 million

Thus the correct answer is (E) $29,440 million

Q7 Compared to 2009, the UK's trade balance is expected to increase by 3.5% in 2010 and China's trading balance is expected to decrease by 4.4%. What is the difference between the 2010 trade balance forecasts for these countries (to the nearest $million)?

(A) $14,405 million
(B) $15,000 million
(C) $16,000 million
(D) **$15,702 million**
(E) $17,000 million

Step 1 – calculate the increase for the UK and the decrease for China
UK: 103.5% x 1,825 = 1,888.875
China: 95.6% x 18,400 = 17,590.4

Step 2 – calculate the difference
17,590.4 - 1,888.875 = $15,701.525 (million $)

***Tip:** these numbers are already in million $, so don't be tempted to round the answer to (C) $16,000 million.*

So the correct answer is (D) $15,702 million

Q8 Which region or regions have experienced a decrease in their trade balance between 2008 and 2009?

(A) South America, United Kingdom
(B) United Kingdom, Russia
(C) South America, Russia
(D) South America
(E) Russia

Using the trade balance figures for 2008 from the earlier question, calculate the change in trade balances for each region between 2008 and 2009

China	*18,400 – 7,200 = 11,200 increase*
United Kingdom	***1,825 – 2,100 = 275 decrease***
Japan	*5,840 – 4,900 = 940 increase*
South America	*1,950 – 1,600 = 350 increase*
Russia	***1,200 – 1,800 = 600 decrease***

So the correct answer is (B) United Kingdom, Russia

. . . .
. . . .
. . . .
. . . .
. . . .
. . . .
. . . .

Numerical Reasoning

Test 1

Question Booklet

This numerical reasoning test comprises **20 questions**, and you will have **17 minutes** in which to correctly answer as many as you can. Calculators are permitted for this test, and it is recommended you have some rough paper to work on.

You will have to work quickly and accurately to perform well in this test. If you don't know the answer to a question, leave it and come back to it if you have time. Each question will have four possible answers, one of which is correct. You may click Back and Next during the test to review or skip questions.

You can submit your test at any time. If the time limit is up before you click submit the test will automatically be submitted with the answers you have selected. It is recommended to keep working until the time limit is up.

Try to find a time and place where you will not be interrupted during the test.
When you are ready, begin the test.

Tze Motor Cars - Accounts (2006-2010)

	2010	2009	2008	2007	2006
Sales	£1,047.9 m	£761.9 m	£1,005.0 m	£627.7 m	£637.8 m
Car units sold	16,710	12,636	15,905	12,163	12,360
Average sales price (per car)	£62,709	£60,296	£63,188	£51,607	£51,602
Average production cost (per car)	£14,500	£15,800	£13,600	£11,400	£13,750
Annual service charge per car	£250	£300	£350	£275	£400

Q1 In which year was there the highest ratio of average sales price: average production cost?

(A) 2006
(B) 2007
(C) 2008
(D) 2009
(E) 2010

Q2 What were the total production costs for 2009 (to the nearest £100,000)?

(A) £199.6 million
(B) £199.7 million
(C) £216.2 million
(D) £216.3 million
(E) £242.2 million

Q4 If the average sales price for 2010 were 5% higher, but the number of cars sold that year was 9% lower, by what percent would the sales revenue have decreased for 2010?

(A) No change
(B) 3.50%
(C) 3.55%
(D) 4.45%
(E) 4.60%

Q5 In 2008, car sales were split across 3 equally-priced models in the ratio of 7:8:6 for models A, B and C respectively. What was the sales revenue for model A?

(A) £287 million
(B) £335 million
(C) £382 million
(D) £383 million
(E) Can't tell from data

YLF plc – Total costs by year (£000s)

	2006	2007	2008	2009	2010
Staff costs	226	234	248	230	215
Property depreciation	120	117	112	115	132
Inventories	11,410	12,505	11,842	15,322	16,420
Loan impairment	13	12	9	17	22
Other expenses	336	459	357	413	502

Q5 In which year, or years, was there a 2:1 Staff costs: Property depreciation ratio?

(A) 2010
(B) 2007 and 2008
(C) 2008 and 2009
(D) 2007 and 2009
(E) 2006, 2007 and 2009

Q6 What percent of total costs did Property depreciation represent in 2007?

(A) 4.7%
(B) 3.7%
(C) 2.7%
(D) 1.9%
(E) 0.9%

Q7 Which cost changed by the second largest percent from 2008 to 2010?

(A) Other expenses
(B) Staff costs
(C) Loan impairment
(D) Inventories
(E) Property depreciation

Q8 If the 2006 Inventories cost had increased by an eighth compared to the previous year, what was the previous year's Inventories cost (to the nearest £10,000)?

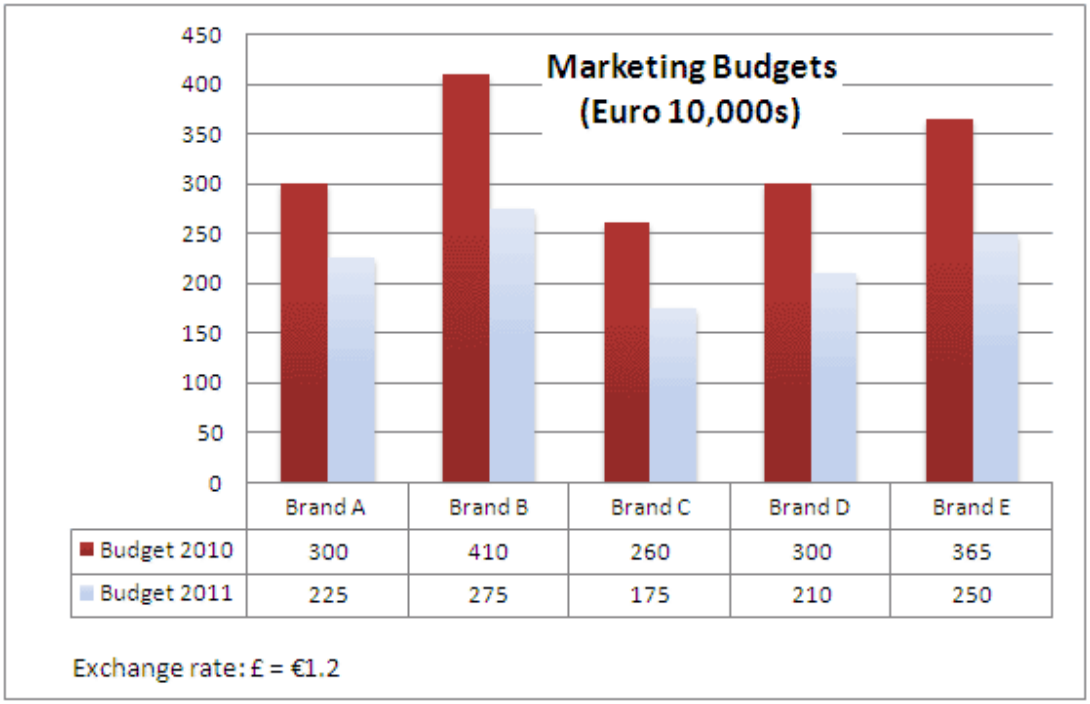
(A) £10.41 million
(B) £10.14 million
(C) £1.04 million
(D) £1.01 million
(E) Can't tell from data

Q9 Between 2010 and 2011 what is the total cut in the marketing budget across the 5 Brands (in 10,000s)?

(A) 135
(B) 400
(C) 500
(D) 1,135
(E) 1,535

Q10 Which Brand has suffered the largest percentage cut in its Marketing Budget?

(A) Brand A
(B) Brand B
(C) Brand C
(D) Brand D
(E) Brand E



Q11 Brand A and Brand D are to have their number of staff reduced by the same percentage reduction seen by their Marketing Budgets between 2010 and 2011. If the number of staff at Brand A was originally 120 and the number of staff at Brand D triple this, what are the new reduced staff numbers for each Brand?

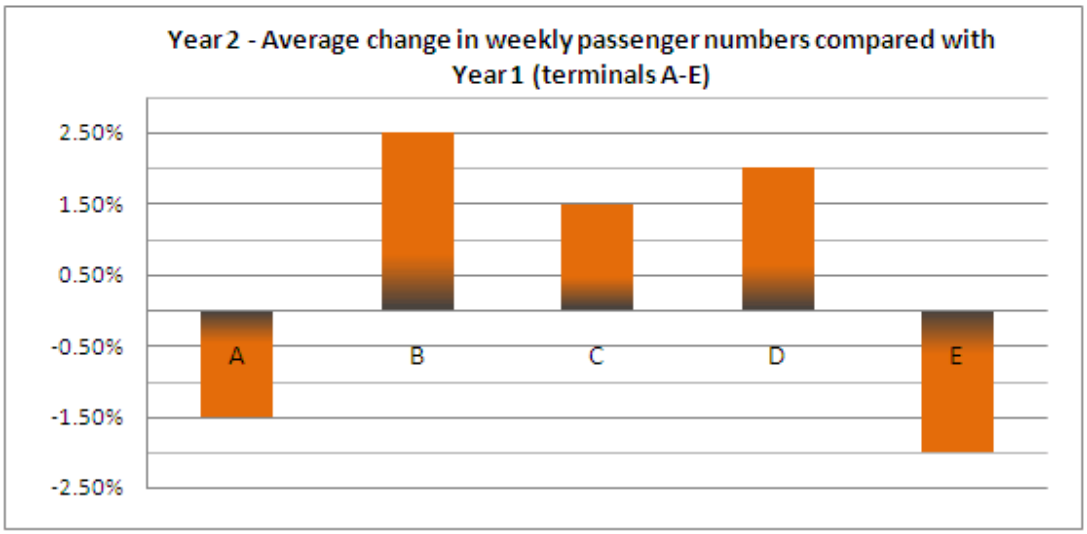
(A) Can't tell from the data
(B) 35 (Brand A); 142 (Brand D)
(C) 90 (Brand A); 252 (Brand D)
(D) 60 (Brand A); 240 (Brand D)
(E) 50 (Brand A); 360 (Brand D)

Q12 The total 2011 Marketing Budget for all five Brands is to be cut by a quarter in 2012. In £, what is the 2012 Marketing Budget? (to the nearest £100,000)?

(A) £3 million
(B) £3.1 million
(C) £5.2 million
(D) £6.2 million
(E) £7.1 million

Year 1 - Average number of passengers per week (1,000s)

All Terminals	A	B	C	D	E
Male passengers	52.9	66.6	62.9	77.1	78.8
Female passengers	52.7	66.5	63.1	76.9	78.5



Q13 Which terminal had the highest number of passengers per week in Year 2?

(A) Terminal A
(B) Terminal B
(C) Terminal C
(D) Terminal D
(E) Terminal E

Q14 For Year 1 what was the average weekly difference between male and female passengers per terminal?

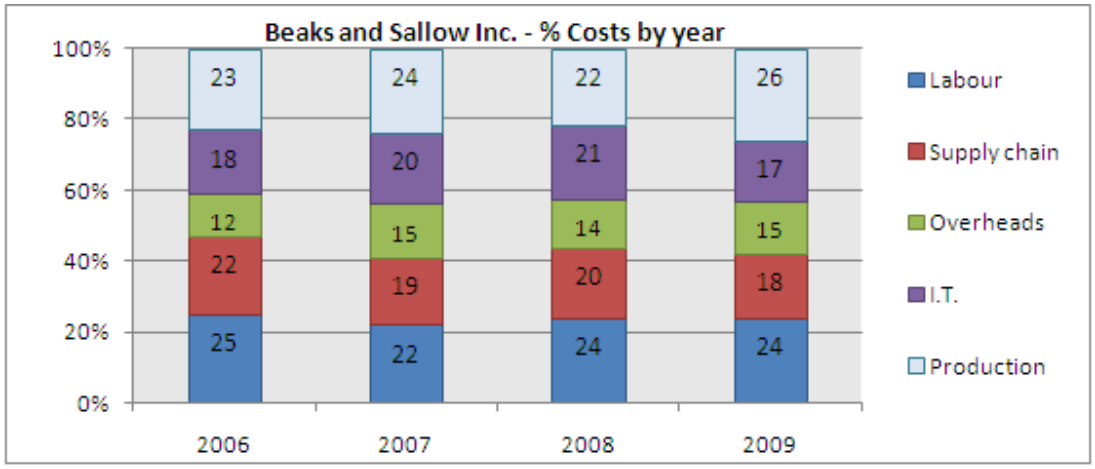
(A) 2,200 more males
(B) 1,200 more males
(C) 220 more females
(D) 140 more females
(E) 120 more males

Q15 In Year 2 each passenger spends on average £4.25 in Terminal C's shops. How much is the average weekly revenue for Terminal C's shops in Year 2 (to the nearest £10,000)?

(A) £4,400,000
(B) £540,000
(C) £54,000
(D) £46,000
(E) £44,000

Q16 A competitor airport operator called Vefy Flights operates a different airport with half the average Year 1 weekly number of passengers operating from 3 terminals. What is Vefy Flights's average weekly number of passengers per terminal (to the nearest 1,000)?

(A) 110,000
(B) 113,000
(C) 133,000
(D) 142,000
(E) 150,000



2010 Total Costs (£10,000s)	Quarter 1	Quarter 2	Quarter 3	Quarter 4
Overheads	104	105	102	101
Supply chain	186	174	162	166
Labour	248	245	319	265
I.T.	149	138	140	191
Production	227	253	291	287

Q17 If the total 2010 costs represent a 5% increase on the total 2009 costs, what were the total 2009 costs (to the nearest £million)?

(A) £3 million
(B) £4 million
(C) £36 million
(D) £37 million
(E) £38 million

Q18 Which cost or costs on their own represented more than 17% of the total costs in 2010?

(A) Labour and Production
(B) Supply chain and I.T.
(C) Labour and Supply chain
(D) Supply chain, Labour and Production
(E) Supply chain, Labour, Production and I.T.

Q19 If 2009's total costs were £250,000, what were the Production costs?

(A) £80,000
(B) £75,000
(C) £70,000
(D) £65,000
(E) £60,000

Q20 If the costs are put into order of decreasing size, in which two years is the order the same?

(A) 2006 and 2007
(B) 2006 and 2008
(C) 2006 and 2010
(D) 2007 and 2008
(E) 2007 and 2009

Numerical Reasoning

Test 1

Solution Booklet

Tze Motor Cars - Accounts (2006-2010)

	2010	2009	2008	2007	2006
Sales	£1,047.9 m	£761.9 m	£1,005.0 m	£627.7 m	£637.8 m
Car units sold	16,710	12,636	15,905	12,163	12,360
Average sales price (per car)	£62,709	£60,296	£63,188	£51,607	£51,602
Average production cost (per car)	£14,500	£15,800	£13,600	£11,400	£13,750
Annual service charge per car	£250	£300	£350	£275	£400

Q1 In which year was there the highest ratio of average sales price: average production cost?

(A) 2006
(B) 2007
(C) 2008
(D) 2009
(E) 2010

Calculate the ratio for each of the 5 years shown;

	2010	*2009*	*2008*	*2007*	*2006*
Average sales price	*£62,709*	*£60,296*	*£63,188*	*£51,607*	*£51,602*
Production cost	*£14,500*	*£15,800*	*£13,600*	*£11,400*	*£13,750*
Ratio	*4.3:1*	*3.8:1*	*4.6:1*	*4.5:1*	*3.8:1*

Thus the correct answer is (C), 2008

Q2 What were the total production costs for 2009 (to the nearest £100,000)?

(A) £199.6 million
(B) £199.7 million
(C) £216.2 million
(D) £216.3 million
(E) £242.2 million

Production costs = production cost per car x number of cars
= £15,800 x 12,636 = £199.648 million
= £199.6 million (to the nearest £100,000)

Thus the correct answer is (A), £199.6 million

Q3 If the average sale price for 2010 was 5% higher, but the number of cars sold that year was 9% lower, by what percent would the sales revenue have decreased for 2010?

(A) No change
(B) 3.50%
(C) 3.55%
(D) 4.45%
(E) 4.60%

Step 1 – calculate the new average sales price
£62,709 x 105% = £65,844.45

Step 2 – calculate the new number of cars sold
16,710 x 91% = 15,206.1

***Note**: they can't sell .1 of a car so we will use 15,206.0. In this question it doesn't actually make a difference to the final answer but it's worth remembering things like this for other questions.*

Step 3 – calculate the total sales increase
£65,844.45 x 15,206 = £1,001.230707 million

Step 4 – calculate the total sales decrease as a %
1,001.230707 ¸ 1,047.9 = 0.95546, which is a 4.45% decrease.

Thus the correct answer is (D), 4.45%

Q4 In 2008, car sales were split across 3 equally-priced models in the ratio of 7:8:6 for models A, B and C respectively. What was the sales revenue for model A?

(A) £287 million
(B) £335 million
(C) £382 million
(D) £383 million
(E) Can't tell from data

Apply the ratio to the total sales for 2008
7 x £1,005.0 m / 21 = £335 million.

***Note**: we can answer this question because we are told that the three models were equally priced. If we were not told this information we would have to answer "cannot tell".*

Thus the correct answer is (B), £335 million

YLF plc – Total costs by year (£000s)

	2006	2007	2008	2009	2010
Staff costs	226	234	248	230	215
Property depreciation	120	117	112	115	132
Inventories	11,410	12,505	11,842	15,322	16,420
Loan impairment	13	12	9	17	22
Other expenses	336	459	357	413	502

Q5 In which year, or years, was there a 2:1 Staff costs: Property depreciation ratio?

(A) 2010
(B) 2007 and 2008
(C) 2008 and 2009
(D) 2007 and 2009
(E) 2006, 2007 and 2009

This can probably be done in your head: go along the columns and double the Property depreciation to see if it equals the Staff costs. You will see this is true for years 2007 and 2009.

	2006	***2007***	***2008***	***2009***	***2010***
Staff costs / Property depreciation	*226 /120*	*234 /117*	*248 /112*	*230 /115*	*215 /132*
	>2	*2*	*>2*	*2*	*<2*

Thus the correct answer is (D), 2007 and 2009

Q6 What percent of total costs did Property depreciation represent in 2007?

(A) 4.7%
(B) 3.7%
(C) 2.7%
(D) 1.9%
(E) 0.9%

***Tip**: Notice the top of the table tells us we are looking at "Total costs by year". This enables us to answer the question. If we were not told the costs given are the whole picture (i.e. Total costs) we would be right to say "cannot say" since we would not know if there are other costs we don't know about. Watch out for this in other questions.*

Step 1 – calculate total costs
234 + 117 + 12,505 + 12 + 459 = 13,327

Step 2 - calculate Property depreciation as a % of total costs
117 / 13,327 = 0.878%

Thus the correct answer is (E) 0.9%

Q7 Which cost changed by the second largest percent from 2008 to 2010?

(A) Other expenses
(B) Staff costs
(C) Loan impairment
(D) Inventories
(E) Property depreciation

Step 1 – calculate the % change for each of the 6 costs between the years 2008 to 2010.

Staff costs	*215 / 248 = 0.867 ; 13.3% decrease*
Property depreciation	*132 / 112 = 1.179 ; 17.9% increase*
Inventories	*16,420 / 11,842 = 1.387 ; 38.7% increase*
Loan impairment	*22 / 9 = 2.44 ; 144.4% increase*
Other expenses	*502 / 357 = 1.406 ; 40.6% increase*

Note: *be careful to note the question asks for "the second largest". It is a common mistake to overlook this and select the largest increase.*

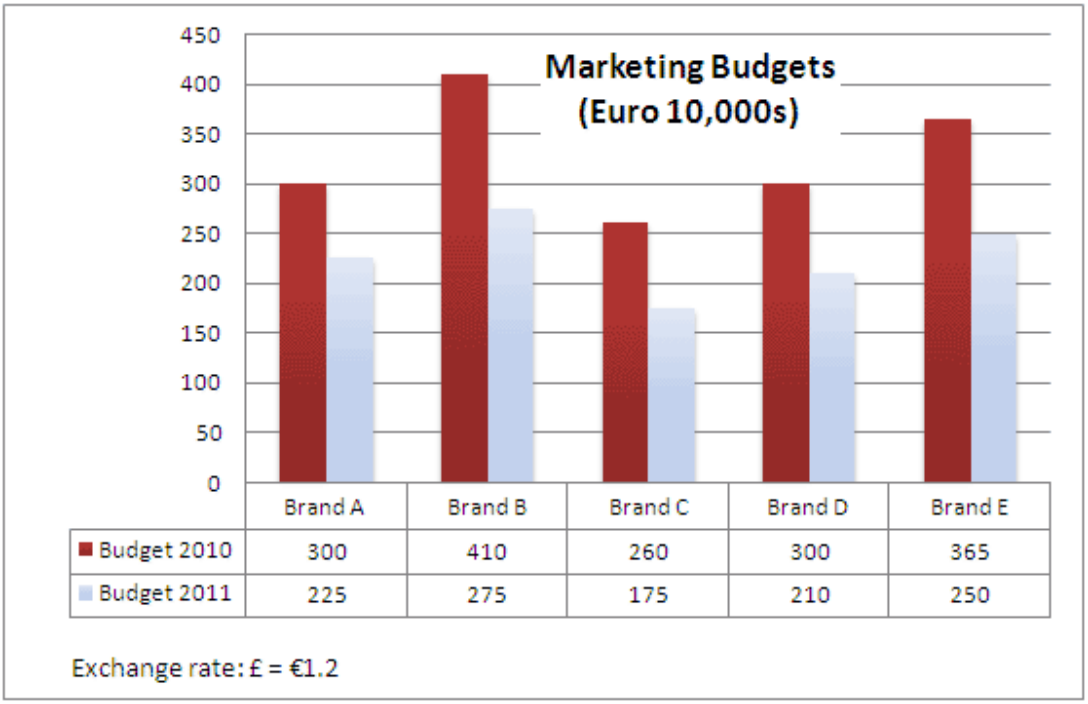
Thus the correct answer is (A), Other expenses

Q8 If the 2006 Inventories cost had increased by an eighth compared to the previous year, what was the previous year's Inventories cost (to the nearest £10,000)?

(A) £10.41 million
(B) £10.14 million
(C) £1.04 million
(D) £1.01 million
(E) Can't tell from data

To increase by an eighth (12.5%) we simply multiply by 1.125. So we can say (previous year's Inventory costs) x 1.125 = £11,410. Rearranging we have previous year's inventory costs = (£11,410 ¸ 1.125) = £10,142,222

Thus the correct answer is (B), £10.14 million



Q9 Between 2010 and 2011 what is the total cut in the marketing budget across the 5 Brands (in 10,000s)?

(A) 135
(B) 400
(C) 500
(D) 1,135
(E) 1,535

Step 1 – calculate the 2010 total marketing budget for each Brand
300 + 410 + 260 + 300 + 365 = 1635

Step 2 – calculate the 2011 total marketing budget for each Brand
225 + 275 + 175 + 210 + 250 = 1135

Step 3 – calculate cut
2010 marketing budget – 2011 marketing budget = 1635 – 1135 = 500 (in 10,000s)

So the correct answer is (C), 500

Q10 Which Brand has suffered the largest percentage cut in its Marketing Budget?

(A) Brand A
(B) Brand B
(C) Brand C
(D) Brand D
(E) Brand E

Step 1 - Calculate the % cut for each branch from 2010 to 2011:

Brand A = 75/300 x 100% = 25%

Brand B = 135/410 x100% = 32.9%

Brand C = 85/260 x 100% = 32.7%

Brand D = 90/300 x 100% = 30%

Brand E = 115/365 x 100% = 31.5%

So the correct answer is (B), Brand B

Q11 Brand A and Brand D are to have their number of staff reduced by the same percentage reduction seen by their Marketing Budgets between 2010 and 2011. If the number of staff at Brand A was originally 120 and the number of staff at Brand D triple this, what are the new reduced staff numbers for each Brand?

(A) Can't tell from the data
(B) 35 (Brand A); 142 (Brand D)
(C) 90 (Brand A); 252 (Brand D)
(D) 60 (Brand A); 240 (Brand D)
(E) 50 (Brand A); 360 (Brand D)

Step 1 – calculate the percentage reduction in Marketing Budget for each Brand.
Brand A: 225 / 300 = 25% reduction
Brand D: 210 / 300 = 30% reduction

Step 2 – calculate the new number of staff for Brand A
120 x 0.75% = 90

Step 3 – calculate the new number of staff for Brand D
(120 x 3) x 0.7 = 252

So the correct answer is (C), 90 (Brand A); 252 (Brand D)

Q12 The total 2011 Marketing Budget for all five Brands is to be cut by a quarter in 2012. In £, what is the 2012 Marketing Budget? (to the nearest £100,000)?

(A) £3 million
(B) £3.1 million
(C) £5.2 million
(D) £6.2 million
(E) £7.1 million

Step 1 – calculate the 2012 marketing budget
2011 marketing budget (from previous question) = 1135 (10,000s)
2012 marketing budget = 11.35 million x 75% = 8.5125 million

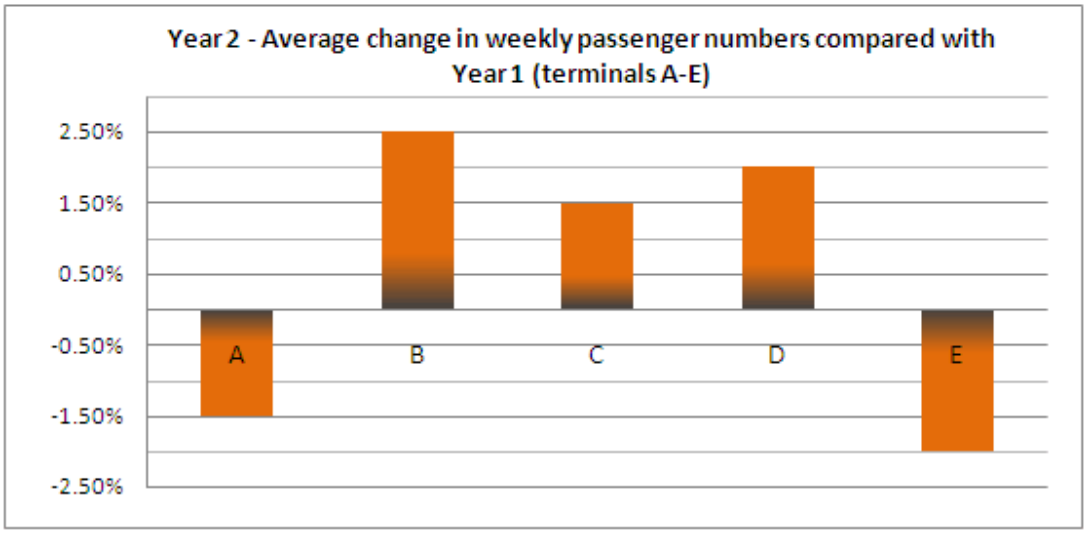
Step 2 – convert into £
8,512,500 / 1.2 = £7.094 million

Step 3 – put answer into the nearest £100,000
£7.1 million

So the correct answer is (E), £7.1 million

Year 1 - Average number of passengers per week (1,000s)

All Terminals	A	B	C	D	E
Male passengers	52.9	66.6	62.9	77.1	78.8
Female passengers	52.7	66.5	63.1	76.9	78.5



Q13 Which terminal had the highest number of passengers per week in Year 2?

(A) Terminal A
(B) Terminal B
(C) Terminal C
(D) Terminal D
(E) Terminal E

The information that you need is shown in both the table and the graph.

Step 1
Given Year 2's 1.5-2.5% increases in passenger numbers, save time by considering only which terminals have the highest number of passengers per week in Year 1. This is Terminal D and E.

Calculate Year 1's total passengers for Terminals D and E (by adding male and female passenger numbers):

Terminal D = 77.1 + 76.9 = 154
Terminal E = 78.8 + 78.5 = 157.3

Step 3 - calculate Year 2's totals for these Terminals:

Terminal D = 154 x 102% = 157.08
Terminal E = 157.3 x 98% = 154.15

So the correct answer is (D), Terminal D

Q14 For Year 1 what was the average weekly difference between male and female passengers per terminal?

(A) 2,200 more males
(B) 1,200 more males
(C) 220 more females
(D) 140 more females
(E) 120 more males

The information that you need is shown in the table.

Step 1 – calculate the total difference between the weekly numbers of male and female passengers

(52.9 – 52.7) + (66.6 - 66.5) + (62.9 – 63.1) + (77.1 – 76.9) + (78.8 – 78.5) = 0.6

Step 2 – calculate the average difference

= 0.6 / 5 (1,000s)

= 0.12 (1,000s)

= 120 more male passengers

So the correct answer is (E) 120 more males

Q15 In Year 2 each passenger spends on average £4.25 in Terminal C's shops. How much is the average weekly revenue for Terminal C's shops in Year 2 (to the nearest £10,000)?

(A) £4,400,000
(B) £540,000
(C) £54,000
(D) £46,000
(E) £44,000

Step 1 – calculate Year 2 passenger total for Terminal C
(62.9 + 63.1) x 101.5% = 127.89
In 1,000's = 127,890

Step 2 – calculate the average weekly revenue generated
127,890 x £4.25 = £543,532.5 (£540,000 to the nearest £10,000)

So the correct answer is (B), £540,000

Q16 A competitor airport operator called Vefy Flights operates a different airport with half the average Year 1 weekly number of passengers operating from 3 terminals. What is Vefy Flights's average weekly number of passengers per terminal (to the nearest 1,000)?

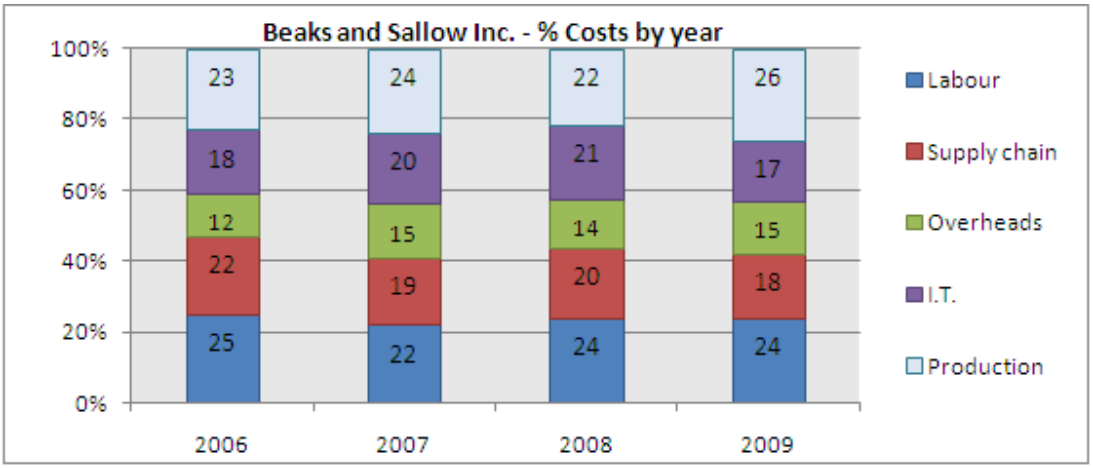
(A) 110,000
(B) 113,000
(C) 133,000
(D) 142,000
(E) 150,000

Step 1 – calculate the total number of Terminal A-E passengers.
Total number of Terminal A-E passengers = 676.

Step 2 - calculate Vefy Flights's average weekly number of passengers
676 x 0.5 = 338

Step 3 – calculate Vefy Flights's average weekly number of passengers per terminal
338 / 3 = 112.667 (1,000's)
= 112,667
= 113,000 (to the nearest 1,000)

So the correct answer is (B), 113,000



2010 Total Costs (£10,000s)	Quarter 1	Quarter 2	Quarter 3	Quarter 4
Overheads	104	105	102	101
Supply chain	186	174	162	166
Labour	248	245	319	265
I.T.	149	138	140	191
Production	227	253	291	287

Q17 If the total 2010 costs represent a 5% increase on the total 2009 costs, what were the total 2009 costs (to the nearest £million)?

(A) £3 million
(B) £4 million
(C) £36 million
(D) £37 million
(E) £38 million

The information for 2010 that you need is shown in the table.
Step 1 – calculate the total costs for 2010
Q1 total = 914
Q2 total = 915
Q3 total = 1,014
Q4 total = 1,010
Total = 3,853

Step 2 – calculate the total costs for 2009
3,853 = 105% x (2009 total costs)
2009 total costs = 3,853 / 1.05 = 3,669

Step 3 - to the nearest £million
3,669 (£10,000s) = £37 million

Thus the correct answer is (D), £37 million

Q18 Which cost or costs on their own represented more than 17% of the total costs in 2010?

(A) Labour and Production
(B) Supply chain and I.T.
(C) Labour and Supply chain
(D) Supply chain, Labour and Production
(E) Supply chain, Labour, Production and I.T.

The information that you need is shown in the table.

Step 1 – Calculate the total cost across the 4 quarters for 2010

Q1 total = 914

Q2 total = 915

Q3 total = 1,014

Q4 total = 1,010

2010 Total costs = 3,853

Step 2 – Calculate the % that each individual cost represented

Overheads = (104 + 105 + 102 + 101) / 3,853 = 10.7%

Supply chain = (186 + 174 + 162 + 166) / 3,853 = 17.9%

Labour = (248 + 245 + 319 + 265) / 3,853 = 28.0%

I.T. = (149 + 138 + 140 + 191) / 3,853 = 16.0%

Production = (227 + 253 + 291 + 287) / 3,853 = 27.4%

Thus the correct answer is (D), Supply chain, Labour and Production

Q19 If 2009's total costs were £250,000, what were the Production costs?

(A) £80,000
(B) £75,000
(C) £70,000
(D) £65,000
(E) £60,000

The information that you need is shown in the graph.

Production costs = 26% = £250,000 x 26% = £65,000

Thus the correct answer is (D), £65,000

Q20 If the costs are put into order of decreasing size, in which two years is the order the same?

(A) 2006 and 2007
(B) 2006 and 2008
(C) 2006 and 2010
(D) 2007 and 2008
(E) 2007 and 2009

Put each year's costs into size order:

2006 = Labour, Production, Supply Chain, IT, Overheads
2007 = Production, Labour, IT, Supply Chain, Overheads
2008 = Labour, Production, IT, Supply Chain, Overheads
2009 = Production, Labour, Supply Chain, IT, Overheads

***Tip:** at this stage you could see that none of the years match so given that there is no "none of these" option you could gamble that 2010 will have the same order as one of the others, and thus go for answer (C).*

Carrying on for the remaining year:
2010 = Labour (1,077), Production (1,058), Supply Chain (688), IT (618), Overheads (412)

Thus the correct answer is (C), 2006 and 2010

Numerical Reasoning

Test 2

Question Booklet

This numerical reasoning test comprises **20 questions**, and you will have **17 minutes** in which to correctly answer as many as you can. Calculators are permitted for this test, and it is recommended you have some rough paper to work on.

You will have to work quickly and accurately to perform well in this test. If you don't know the answer to a question, leave it and come back to it if you have time. Each question will have four possible answers, one of which is correct. You may click Back and Next during the test to review or skip questions.

You can submit your test at any time. If the time limit is up before you click submit the test will automatically be submitted with the answers you have selected. It is recommended to keep working until the time limit is up.

Try to find a time and place where you will not be interrupted during the test.
When you are ready, begin the test.

Product code	Non-European stores selling product	Current month's sales ($)	Price per product unit ($)
DE45*	14	35,000	175
PU20*	9	20,000	200
AE25	6	13,000	130
PU10**	5	24,000	150
FD24**	7	9,000	180

* Promotional offer = 3 for the price of 2

** Promotional offer = 4 for the price of 3

Product code	European stores selling product	Current month's sales (€)	Price per product unit (€)
DE45	26	21,000	150
PU20	19	30,000	160
AE25	11	24,500	200
PU10	9	18,700	110
FD24	13	14,700	90

Q1 Which of the products shown had the lowest value of sales per non-European store and which had the highest value of sales per European store?

(A) PU10 (non-European); AE25 (European)
(B) FD24 (non-European); DE45 (European)
(C) FD24 (non-European); AE25 (European)
(D) AE25 (non-European); PU10 (European)
(E) AE25 (non-European); FD24 (European)

Q2 What is the discrepancy (in $) between the AE25 price per product unit in non-European stores compared to European stores. Use an exchange rate of 0.80 to the $.

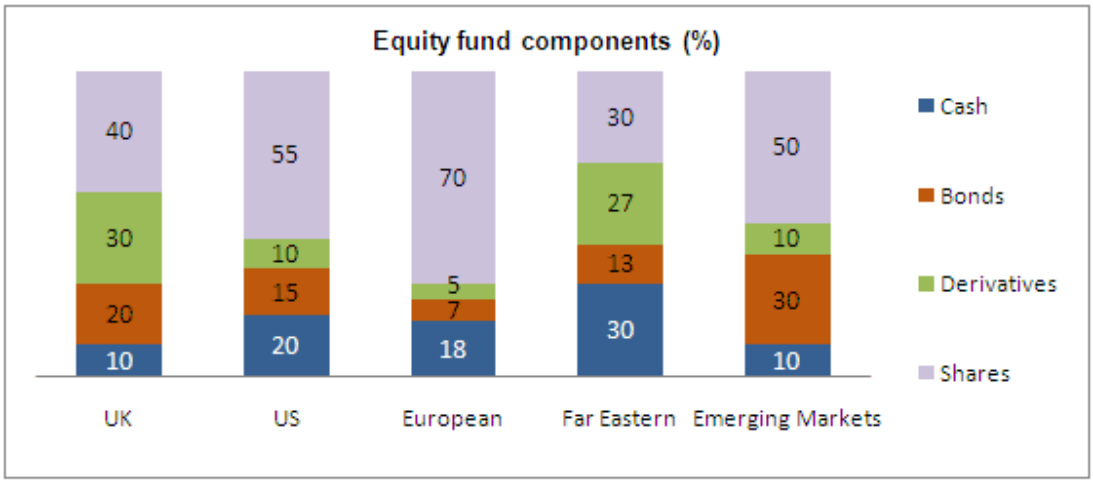
(A) $30
(B) $120
(C) $130
(D) $200
(E) $230

Q3 This month's combined target for non-European and European sales of AE25 is 40,000. Using an exchange rate of 0.75 to the $, what is the difference between the sales values shown and this target?

(A) 575
(B) 750
(C) 5,100
(D) 5,750
(E) 7,500

Q4 Given that a customer uses the promotional offers shown, put the 5 products sold in non-European stores into order of increasing promotional price per unit (starting with the cheapest).

(A) AE25, PU10, DE45, FD24, PU20
(B) PU10, DE45, PU20, AE25, FD24
(C) PU10, DE45, AE25, PU20, FD24
(D) DE45, PU10, PU20, AE25, FD24
(E) PU10, DE45, PU20, FD24, AE25



Equity fund values	UK	US	European	Far Eastern	Emerging Markets
Total value (£million)	55.6	24.3	52.1	26.2	38.9
Number of investors	3,450	1,460	3,295	1,575	2,660

Q5 On the previous day, the value of the shares held in the Emerging Markets Fund was 0.5% lower than the values given here. What was the previous day's value of shares in the Emerging Markets Fund?

(A) £18.35 million
(B) £18.40 million
(C) £18.50 million
(D) £19.35 million
(E) £19.40 million

Q6 Which out of the Emerging Markets, UK and Far Eastern funds hold the lowest value of Cash and the lowest value of Bonds?

(A) UK (Cash); Far Eastern (Bonds)
(B) Emerging Markets (Cash); Far Eastern (Bonds)
(C) Far Eastern (Cash); UK (Bonds)
(D) Emerging Markets (Cash); UK (Bonds)
(E) UK (Cash); Far Eastern (Cash)

Q7 Which of the components of the UK and US equity funds have the highest and the lowest value?

(A) lowest is US Fund (Bonds); highest is UK Fund (Derivatives)
(B) lowest is US Fund (Shares); highest is UK Fund (Shares)
(C) lowest is UK Fund (Bonds); highest is US Fund (Shares)
(D) lowest is US Fund (Bonds); highest is UK Fund (Shares)
(E) lowest is US Fund (Derivatives); highest is UK Fund (Shares)

Q8 Which equity fund holding(s) hold less than double the number of Shares compared to Bonds?

(A) UK
(B) US
(C) Emerging Markets
(D) UK, US
(E) UK, US, Emerging Markets

Q9 Averaged across the Manufacturing Plants, put the average values for each of the maintenance costs in decreasing size order, starting with the highest.

(A) Servicing, Administration, Misc., Rent, Insurance, Utilities
(B) Servicing, Administration, Rent, Misc., Utilities, Insurance
(C) Servicing, Administration, Rent, Misc., Insurance, Utilities
(D) Servicing, Administration, Misc., Rent, Utilities, Insurance
(E) None of these

Q10 For the Glasgow manufacturing plant, which maintenance cost(s) represent approximately 7% of the total costs?

(A) Rent and Utilities
(B) Rent
(C) Utilities
(D) Insurance
(E) Insurance and Utilities

MAINTENANCE COSTS
(£ per week)

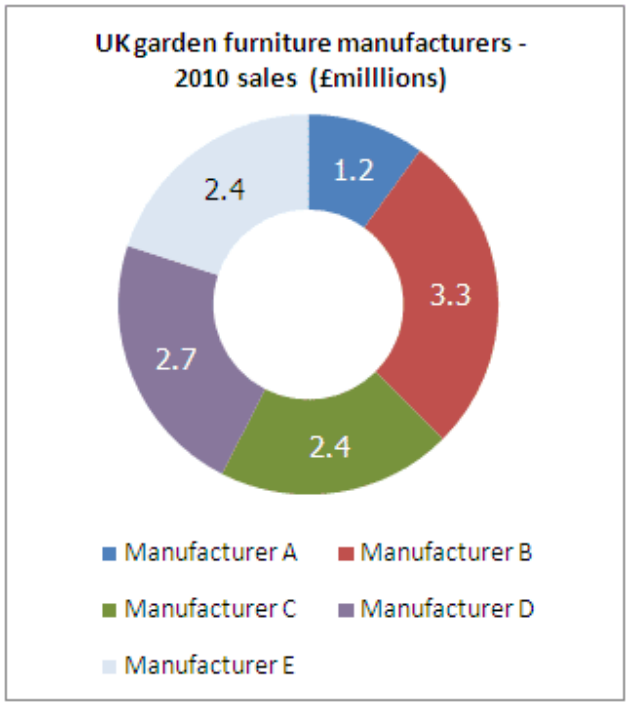
Manufacturing Plant	Insurance	Servicing	Rent	Utilities	Administration	Misc.
Midlands	196	1,050	300	95	650	525
Bordeaux	204	1,100	250	236	600	400
Berlin	212	950	275	164	450	400
Amsterdam	154	1,025	350	245	525	500
Glasgow	195	875	300	189	720	425

Q11 What is the average annual cost for servicing each of the 5 manufacturing plants (assume 4 weeks in a month)?

(A) £3,300
(B) £12,400
(C) £16,500
(D) £39,600
(E) £48,000

Q12 Which two manufacturing plants have the same total maintenance costs per week?

(A) Midlands and Glasgow
(B) Bordeaux and Glasgow
(C) Bordeaux and Amsterdam
(D) Midlands and Amsterdam
(E) None of these



COMPANY C SALES (£)		
REGION	2009	2010
Northern	312,500	278,500
Central	396,700	470,400
Southern	546,300	502,000
Eastern	595,500	643,100
Western	529,000	506,000

Q13 Which garden furniture manufacturer has 22.5% of the UK market in terms of 2010 annual sales?

(A) Manufacturer A
(B) Manufacturer B
(C) Manufacturer C
(D) Manufacturer D
(E) Manufacturer E

Q14 Manufacturers B and D each aim to increase their annual sales from 2010 to 2011 by a quarter. Manufacturers A, C and E each aim to grow their annual sales by a fifth. Assuming all companies meet these targets, what will be 2011's total furniture manufacturer sales (to the nearest £million)?

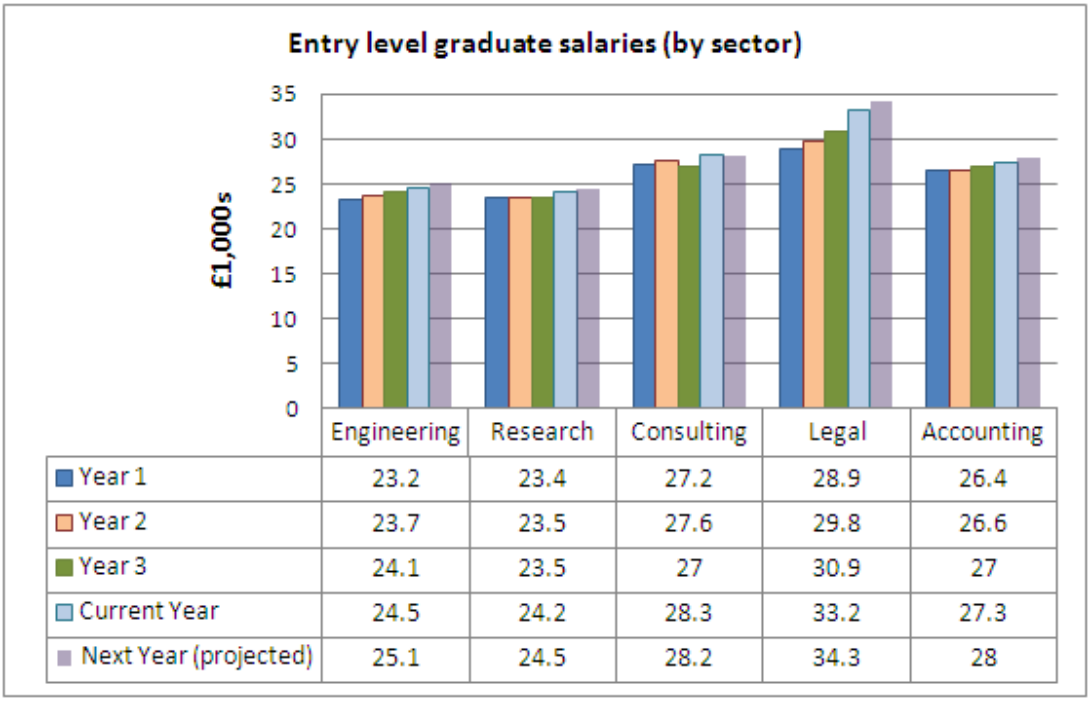
(A) £13 million
(B) £14 million
(C) £15 million
(D) £16 million
(E) £17 million

Q15 What is the percentage increase in Company C's total sales for 2010 compared its 2009 total sales?

(A) 0.83%
(B) 0.84%
(C) 0.85%
(D) 0.86%
(E) 0.87%

Q16 If Company C's sales in 2009 were in the ratio of 8:7 for online: offline sales, what were the offline sales (to the nearest £1,000)?

(A) £110,000
(B) £1,000,000
(C) £1,100,000
(D) £1,110,000
(E) £1,111,000



	Engineering	Research	Consulting	Legal	Accounting
Year 1	23.2	23.4	27.2	28.9	26.4
Year 2	23.7	23.5	27.6	29.8	26.6
Year 3	24.1	23.5	27	30.9	27
Current Year	24.5	24.2	28.3	33.2	27.3
Next Year (projected)	25.1	24.5	28.2	34.3	28

Q17 Assume that the percentage change trends between the Current Year and Next Year continue at the same rate for a subsequent year. What's the subsequent year's average entry level graduate salary across the 5 sectors (to the nearest £500)?

(A) £28,000
(B) £28,500
(C) £29,000
(D) £29,500
(E) Can't tell from data

Q18 In Year 3 a company paid the average entry graduate starting salaries when recruiting 15 graduates for a consultancy role and 6 graduates for a research role. What was the average salary per recruited graduate?

(A) £26,000
(B) £26,114
(C) £26,429
(D) £26,500
(E) £27,000

Q19 Which sector has seen the smallest percentage increase in graduate entry level salary between Year 2 and the Current Year?

(A) Engineering
(B) Research
(C) Consulting
(D) Legal
(E) Accounting

Q20 The current year's entry level graduate salaries for working in logistics and retail are £25,000 and £24,000 respectively. If these sectors experience the same percentage change as the legal sector over the same period, what's next year's predicted entry level graduate salary in the logistics and retail sectors (to the nearest £100)?

(A) £24,800 (logistics); £25,800 (retail)
(B) £25,100 (logistics); £25,300 (retail)
(C) £25,500 (logistics); £25,000 (retail)
(D) £25,800 (logistics); £24,800 (retail)
(E) Can't tell from data

Numerical Reasoning
Test 2

Solution Booklet

Product code	Non-European stores selling product	Current month's sales ($)	Price per product unit ($)
DE45*	14	35,000	175
PU20*	9	20,000	200
AE25	6	13,000	130
PU10**	5	24,000	150
FD24**	7	9,000	180

* Promotional offer = 3 for the price of 2

** Promotional offer = 4 for the price of 3

Product code	European stores selling product	Current month's sales (€)	Price per product unit (€)
DE45	26	21,000	150
PU20	19	30,000	160
AE25	11	24,500	200
PU10	9	18,700	110
FD24	13	14,700	90

Q1 Which of the products shown had the lowest value of sales per non-European store and which had the highest value of sales per European store?

(A) PU10 (non-European); AE25 (European)
(B) FD24 (non-European); DE45 (European)
(C) FD24 (non-European); AE25 (European)
(D) AE25 (non-European); PU10 (European)
(E) AE25 (non-European); FD24 (European)

Step 1 – calculate each product's average sales per European store
DE45 = 21,000/26 = 808
PU20 = 30,000/19 = 1,579
AE25 = 24,500/11 = 2,227
PU10 = 18,700/9 = 2,078
FD24 = 14,700/13 = 1,131

Step 2 – calculate each product's average sales per non-European store
DE45 = 35,000/14 = 2,500
PU20 = 20,000/9 = 2,222
AE25 = 13,000/6 = 2,167
PU10 = 24,000/5 = 4,800
FD24 = 9,000/7 = 1,286

Thus the correct answer is (C), FD24 (non-European); AE25 (European)

Q2 What is the discrepancy (in $) between the AE25 price per product unit in non-European stores compared to European stores. Use an exchange rate of 0.80 to the $.

(A) $30
(B) $120
(C) $130
(D) $200
(E) $230

The information that you need is shown in both tables. Note from the possible answers it doesn't matter which is the greater, we just need the difference.

Tip: *if you struggle with the term " x to the $" and you sometimes multiply when you should divide by the conversion, think of an extreme example. So think of a two currencies that have very different strengths, for example Zimbabwean Dollar to the British Pound. It doesn't matter what the values are but you know there are lots of ZWDs to the BGP and you also know that the same product will cost a lot more ZWDs than GBP. Hopefully that will help you decide if currency A should be a higher number than currency B, or vise versa.*

Step 1 – read from the table the AE25 price per product unit (non-European stores)
= $130

Step 2 – Calculate the AE25 price per product unit (European stores)
= 200 ¸ 0.80 = $250

Step 3 – calculate the difference between the two
$250 - $130 = $120

Thus the correct answer is (B), $120

Q3 This month's combined target for non-European and European sales of AE25 is 40,000. Using an exchange rate of 0.75 to the $, what is the difference between the sales values shown and this target?

(A) 575
(B) 750
(C) 5,100
(D) 5,750
(E) 7,500

The information that you need is shown in both tables

Step 1 – calculate AE25's non-European sales in Euros
$13,000 x 0.75 = 9,750

Step 2 – calculate AE25's combined European and non-European sales
9,750 + 24,500 = 34,250

Step 3 – calculate the discrepancy against target sales
40,000 - 34,250 = 5,750

Thus the correct answer is (D), 5,750

Q4 Given that a customer uses the promotional offers shown, put the 5 products sold in non-European stores into order of increasing promotional price per unit (starting with the cheapest).

(A) AE25, PU10, DE45, FD24, PU20
(B) PU10, DE45, PU20, AE25, FD24
(C) PU10, DE45, AE25, PU20, FD24
(D) DE45, PU10, PU20, AE25, FD24
(E) PU10, DE45, PU20, FD24, AE25

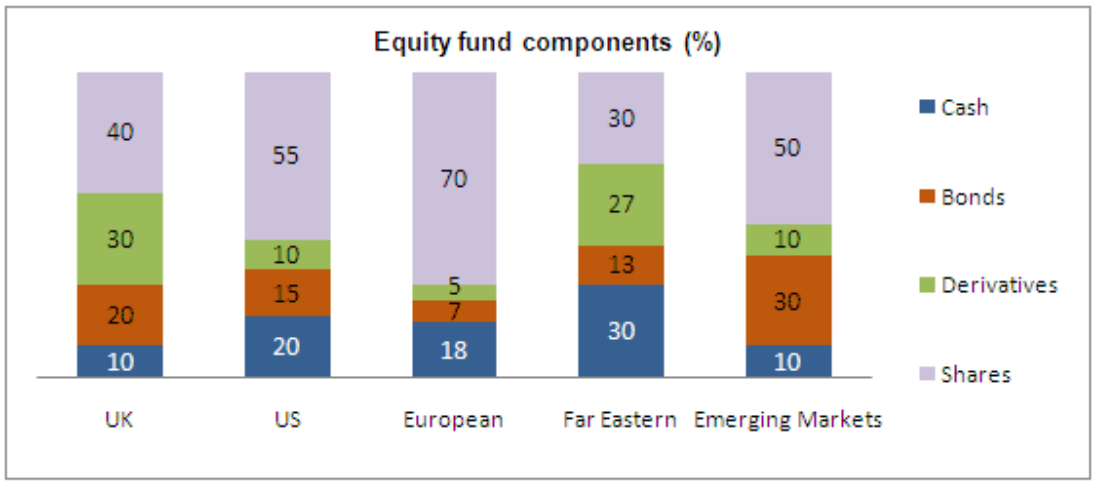
The information that we need is shown in the first table (non-European stores)

Step 1 – calculate the 3 for the price of 2 promotional offers
DE45 promotional price per unit = 2/3 x $175 = $116.67
PU20 promotional price per unit = 2/3 x $200 = $133.33

Step 2 – calculate the 4 for the price of 3 promotional offers
PU10 promotional price per unit = 3/4 x $150 = $112.50
FD24 promotional price per unit = 3/4 x $180 = $135.00

Step 3 – put these promotional prices into order alongside the fifth product (AE25) priced at $130 and not on promotion

Thus the correct answer is (C), PU10, DE45, AE25, PU20, FD24



Equity fund values	UK	US	European	Far Eastern	Emerging Markets
Total value (£million)	55.6	24.3	52.1	26.2	38.9
Number of investors	3,450	1,460	3,295	1,575	2,660

Q5 On the previous day, the value of the shares held in the Emerging Markets Fund was 0.5% lower than the values given here. What was the previous day's value of shares in the Emerging Markets Fund?

(A) £18.35 million
(B) £18.40 million
(C) £18.50 million
(D) £19.35 million
(E) £19.40 million

The information that we need is shown in both the graph and the table.

Step 1 - Calculate the value of the shares component of the Emerging Markets Fund

38.9 million x 50% = £19.45 million

Step 2 – Calculate the previous day's value
£19.45 million x .995 = £19.35 million

Thus the correct answer is (D), £19.35 million

Q6 Which out of the Emerging Markets, UK and Far Eastern funds hold the lowest value of Cash and the lowest value of Bonds?

(A) UK (Cash); Far Eastern (Bonds)
(B) Emerging Markets (Cash); Far Eastern (Bonds)
(C) Far Eastern (Cash); UK (Bonds)
(D) Emerging Markets (Cash); UK (Bonds)
(E) UK (Cash); Far Eastern (Cash)

The information that we need is shown in both the table and the graph.

Step 1 - Calculate the value of the Cash held within each of the Funds in the question
Cash value = total value x cash %
UK (Cash) = 55.6 x 10% = £5.56 million

See table below:

	Cash
UK	*£5.56 million*
Far Eastern	*£7.86 million*
Emerging Markets	***£3.89 million***

Step 2 - Calculate the value of the Bonds held within each of the Funds in the question
Bonds value = total value x bonds %
UK (Bonds) = 55.6 x 20% = £11.12 million

See table below:

	Bond
UK	*£11.12 million*
Far Eastern	***£3.41 million***
Emerging Markets	*£11.67 million*

Thus the correct answer is (B), Emerging Markets (Cash); Far Eastern (Bonds)

Q7 Which of the components of the UK and US equity funds have the highest and the lowest value?

(A) lowest is US Fund (Bonds); highest is UK Fund (Derivatives)

(B) lowest is US Fund (Shares); highest is UK Fund (Shares)

(C) lowest is UK Fund (Bonds); highest is US Fund (Shares)

(D) lowest is US Fund (Bonds); highest is UK Fund (Shares)

(E) lowest is US Fund (Derivatives); highest is UK Fund (Shares)

Tip: *Note that just from looking at the graph and table we know the overall US fund is smaller than the UK fund and the smallest fraction within the US find (10% to Derivatives) is not larger than the smallest fraction within the UK fund. So we can instantly say the smallest fraction is Derivatives in the US fund. As it happens there is only one multiple choice with this as an option so we know (E) is the correct answer.*

In full, the solution is as follows. The information that we need is shown in both the graph and the table.

Calculate the value of each component of each equity fund, using this formula:

Component value = Total value x Equity fund component %

UK Fund (Cash) = 55.6 x 10% = 5.56 (£million)

See table below for other component values:

	Component value (£million)			
	Cash	*Bonds*	*Derivatives*	*Shares*
UK	*5.56*	*11.12*	*16.68*	***22.24***
US	*4.86*	*3.65*	***2.43***	*13.37*

Thus the correct answer is (E), lowest is US Fund (Derivatives); highest is UK Fund (Shares)

Q8 Which equity fund holding(s) hold less than double the number of Shares compared to Bonds?

(A) UK
(B) US
(C) Emerging Markets
(D) UK, US
(E) UK, US, Emerging Markets

The information that we need is shown in the graph.

Calculate the Shares: Bonds ratios for each equity fund

	Bonds	Shares
UK	20	40
US	15	55
European	7	70
Far Eastern	13	30
Emerging Markets	**30**	**50**

The UK fund has exactly double the number of Shares compared to Bonds. Only the Emerging Markets has less than double the number of Shares compared to Bonds.

Thus the correct answer is (C) Emerging Markets

MAINTENANCE COSTS (£ per week)						
Manufacturing Plant	Insurance	Servicing	Rent	Utilities	Administration	Misc.
Midlands	196	1,050	300	95	650	525
Bordeaux	204	1,100	250	236	600	400
Berlin	212	950	275	164	450	400
Amsterdam	154	1,025	350	245	525	500
Glasgow	195	875	300	189	720	425

Q9 Averaged across the Manufacturing Plants, put the average values for each of the maintenance costs in decreasing size order, starting with the highest.

(A) Servicing, Administration, Misc., Rent, Insurance, Utilities
(B) Servicing, Administration, Rent, Misc., Utilities, Insurance
(C) Servicing, Administration, Rent, Misc., Insurance, Utilities
(D) Servicing, Administration, Misc., Rent, Utilities, Insurance
(E) None of these

Calculate the average for each maintenance cost:
Insurance = 192.2
Servicing = 1,000
Rent = 295
Utilities = 185.8
Administration = 589
Misc = 450

Thus the correct answer is (A), Servicing, Administration, Misc., Rent, Insurance, Utilities

Q10 For the Glasgow manufacturing plant, which maintenance cost(s) represent approximately 7% of the total costs?

(A) Rent and Utilities

(B) Rent

(C) Utilities

(D) Insurance

(E) Insurance and Utilities

Step 1 - For the Glasgow plant, calculate the total costs

195 + 875 + 300 + 189 + 720 + 425 = 2,704

Step 2 - For the Glasgow plant, calculate each cost as a % of the total cost

Insurance = 100% x 195/2,704 = 7%

Servicing = 100% x 875/2,704 = 32%

Rent = 100% x 300/2,704 = 11%

Utilities = 100% x 189/2,704 = 7%

Administration = 100% x 720/2,704 = 27%

Misc = 100% x 425/2,704 = 16%

***Tip:** to save time, you can stop after you've calculated 7% for Insurance and just scan across the row to see if any other costs are close to £195. You will see that Utilities are.*

Thus the correct answer is (E), Insurance and Utilities

Q11 What is the average annual cost for servicing each of the 5 manufacturing plants (assume 4 weeks in a month)?

(A) £3,300
(B) £12,400
(C) £16,500
(D) £39,600
(E) £48,000

Step 1 – total the servicing costs
1,050 + 1,100 + 950 + 1,025 + 875 = £5,000 per week

Step 2 – calculate the monthly cost
5,000 x 4 = £20,000 per month

Step 3 – calculate the average monthly cost
£20,000 / 5 = £4,000 per month

Step 4 – calculate the average annual cost
4,000 x 12 = £48,000

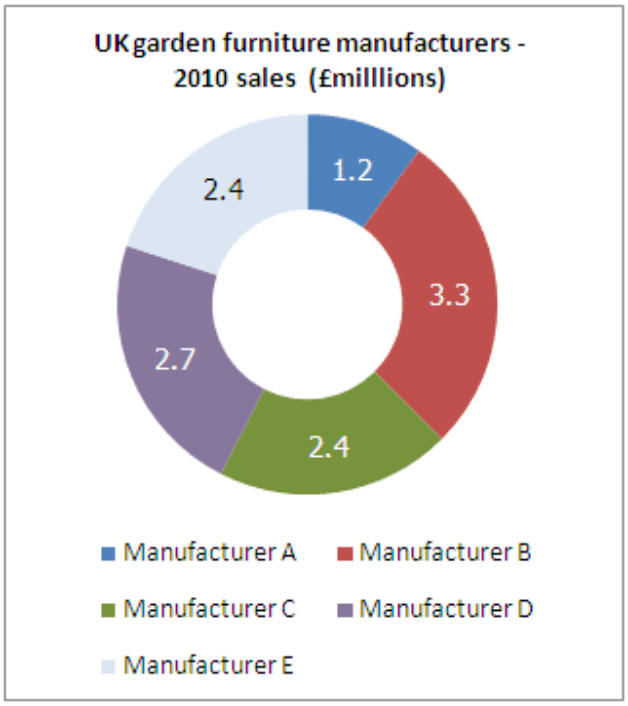
Thus the correct answer is (E), £48,000

Q12 Which two manufacturing plants have the same total maintenance costs per week?

(A) Midlands and Glasgow
(B) Bordeaux and Glasgow
(C) Bordeaux and Amsterdam
(D) Midlands and Amsterdam
(E) None of these

Calculate the total weekly maintenance costs for each production plant
Midlands = 196 + 1,050 + 300 + 95 + 650 + 525 = 2,816
Bordeaux = 204 + 1,100 + 250 + 236 + 600 + 400 = 2,790
Berlin = 212 + 950 + 275 + 164 + 450 + 400 =2,451
Amsterdam = 154 + 1,025 + 350 + 245 + 525 + 500 = 2,799
Glasgow = 195 + 875 + 300 + 189 + 720 + 425 = 2,704

Thus the correct answer is (E), None of these



COMPANY C SALES (£)		
REGION	2009	2010
Northern	312,500	278,500
Central	396,700	470,400
Southern	546,300	502,000
Eastern	595,500	643,100
Western	529,000	506,000

Q13 Which garden furniture manufacturer has 22.5% of the UK market in terms of 2010 annual sales?

(A) Manufacturer A
(B) Manufacturer B
(C) Manufacturer C
(D) Manufacturer D
(E) Manufacturer E

The information that you need is shown in the pie-chart.

Step 1 – Calculate the total annual sales for all furniture manufacturers
1.2 + 3.3 + 2.4 + 2.7 + 2.4 = £12 million

Step 2 – Next, the quickest way to complete this question is to calculate 22.5% of the 12 million and see which manufacturer has this sales value. So 22.5% of 12 is 2.7. We immediately see that Manufacturer D has sales of 2.7 (ignoring any units).

Alternatively, the slower way would be to calculate the % of the UK market held by each furniture manufacturer:

Manufacturer A = 1.2/12 x 100% = 10%
Manufacturer B = 3.3/12 x 100% = 27.5%
Manufacturer C = 2.4/12 x 100% = 20%
Manufacturer D = 2.7/12 x 100% = 22.5%
Manufacturer E = 2.4/12 x 100% = 20%

Thus the correct answer is (D), Manufacturer D

Q14 Manufacturers B and D each aim to increase their annual sales from 2010 to 2011 by a quarter. Manufacturers A, C and E each aim to grow their annual sales by a fifth. Assuming all companies meet these targets, what will be 2011's total furniture manufacturer sales (to the nearest £million)?

(A) £13 million
(B) £14 million
(C) £15 million
(D) £16 million
(E) £17 million

The information that you need is shown in the pie-chart.

Step 1 - Calculate the 2011 targets for each garden furniture manufacturer

Manufacturer A: 1.2 x 1.2 = 1.44
Manufacturer B: 3.3 x 1.25 = 4.125
Manufacturer C: 2.4 x 1.2 = 2.88
Manufacturer D: 2.7 x 1.25 = 3.375
Manufacturer E: 2.4 x 1.2 = 2.88

Step 2 – Calculate the total 2011 target for all garden furniture manufacturers
1.44 + 4.125 + 2.88 + 3.375 + 2.88 = 14.7

Step 3 – to the nearest £million = £15 million

Note: in this question we were lucky that £14.7 million was not an available answer. Sometimes questions deliberately include the answer not rounded as required, to catch you out.

Thus the correct answer is (C), £15 million

Q15 What is the percentage increase in Company C's total sales for 2010 compared its 2009 total sales?

(A) 0.83%

(B) 0.84%

(C) 0.85%

(D) 0.86%

(E) 0.87%

The information that you need is shown in the table.

Step 1 – calculate 2009's total sales

312,500 + 396,700 + 546,300 + 595,500 + 529,000 = 2,380,000

Step 2 – calculate 2010's total sales

278,500 + 470,400 + 502,000 + 643,100 + 506,000 = 2,400,000

Step 3 – calculate the % difference

2,400,000 / 2,380,000 = 1.0084 which is a 0.84% increase.

Thus the correct answer is (B), 0.84%

Q16 If Company C's sales in 2009 were in the ratio of 8:7 for online: offline sales, what were the offline sales (to the nearest £1,000)?

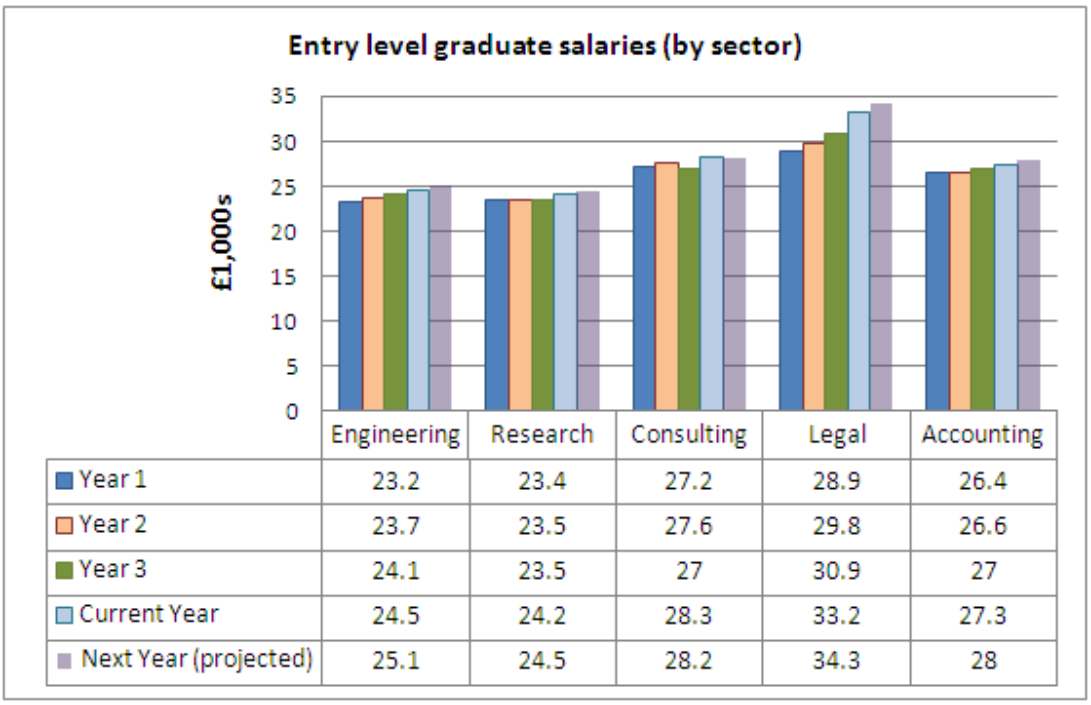
(A) £110,000
(B) £1,000,000
(C) £1,100,000
(D) £1,110,000
(E) £1,111,000

Step 1 – use Manufacturer C's 2009 total sales figure from the previous question i.e. 2,380,000 (312,500 + 396,700 + 546,300 + 595,500 + 529,000)

Step 2 – put this figure into the question's ratio
Online sales + offline sales = 2,380,000
Offline sales = (2,380,000 x 7)/ (7+8) = 1,110,667

Step 3 - to the nearest £1,000 = 1,111,000

Thus the correct answer is (E), £1,111,000



	Engineering	Research	Consulting	Legal	Accounting
Year 1	23.2	23.4	27.2	28.9	26.4
Year 2	23.7	23.5	27.6	29.8	26.6
Year 3	24.1	23.5	27	30.9	27
Current Year	24.5	24.2	28.3	33.2	27.3
Next Year (projected)	25.1	24.5	28.2	34.3	28

Q17 Assume that the percentage change trends between the Current Year and Next Year continue at the same rate for a subsequent year. What's the subsequent year's average entry level graduate salary across the 5 sectors (to the nearest £500)?

(A) £28,000
(B) £28,500
(C) £29,000
(D) £29,500
(E) Can't tell from data

It might be tempting to do the following calculation, however since we don't know how many graduates there are in each sector we cannot calculate the average salary. For example if Engineering has 1,000 graduates and Research has 10, it is not true to add up the totals and divide by the number of sectors (five).

***Thus we cannot tell from the data**.*

Don't be tempted to do this:

Step 1 – Calculate the subsequent year's entry level graduate salary for each sector
Step 2 – Calculate the average
Step 3 – to the nearest £500 = £28,500

Q18 In Year 3 a company paid the average entry graduate starting salaries when recruiting 15 graduates for a consultancy role and 6 graduates for a research role. What was the average salary per recruited graduate?

(A) £26,000
(B) £26,114
(C) £26,429
(D) £26,500
(E) £27,000

Step 1 – total the salaries for 15 graduates (consultancy)
15 x 27,000 = 405,000

Step 2 – total the salaries for 6 graduates (research)
6 x 23,500 = 141,000

Step 3 – calculate the average salary per graduate
(405,000 + 141,000)/21 = £26,000

Thus the correct answer is (A), £26,000

Q19 Which sector has seen the smallest percentage increase in graduate entry level salary between Year 2 and the Current Year?

(A) Engineering
(B) Research
(C) Consulting
(D) Legal
(E) Accounting

Calculate the % increase for each sector

Engineering: (24.5 – 23.7)/23.7 = 3.4%
Research: (24.2 – 23.5)/23.5 = 3.0%
Consulting: (28.3 – 27.6)/27.6 = 2.5%
Legal: (33.2 – 29.8)/29.8 = 11.4%
Accounting: (27.3 – 26.6)/26.6 = 2.6%

Thus the correct answer is (C), Consulting

Q20 The current year's entry level graduate salaries for working in logistics and retail are £25,000 and £24,000 respectively. If these sectors experience the same percentage change as the legal sector over the same period, what's next year's predicted entry level graduate salary in the logistics and retail sectors (to the nearest £100)?

(A) £24,800 (logistics); £25,800 (retail)
(B) £25,100 (logistics); £25,300 (retail)
(C) £25,500 (logistics); £25,000 (retail)
(D) £25,800 (logistics); £24,800 (retail)
(E) Can't tell from data

Step 1 – calculate the % increase in legal sector salaries between the current year and next year
100% x (34.3 – 33.2)/33.2 = 3.31%

Step 2 – apply this % increase to the entry level graduate salaries (logistics)
103.31% x £25,000 = £25,828

Step 3 – apply this % increase to the entry level graduate salaries (retail)
103.31% x £24,000 = £24,794

Thus the correct answer is (D), £25,800 (logistics); £24,800 (retail)

DRAGNET

Numerical Test 3

Questions Booklet

	Exchange Rate (to the £)				
	Week 1	Week 2	Week 3	Week 4	Week 5
Euro €	1.2	1.26	1.3	1.34	1.28
US $	1.64	1.69	1.74	1.84	1.76
Japanese Yen	123.2	128.6	134.8	135	128.4
South African Rand	13.4	13.8	13.2	13.6	14.2

Q1 How much is 5,000 South African Rand worth in Week 4 in US $?

(A) $199.81
(B) $367.65
(C) $476.65
(D) $599.18
(E) $676.48

Q2 In Week two 10,000 Japanese Yen is converted into £. In Week 5 this is converted into what value in Euros?

(A) 110.00
(B) 104.82
(C) 99.53
(D) 77.76
(E) 60.75

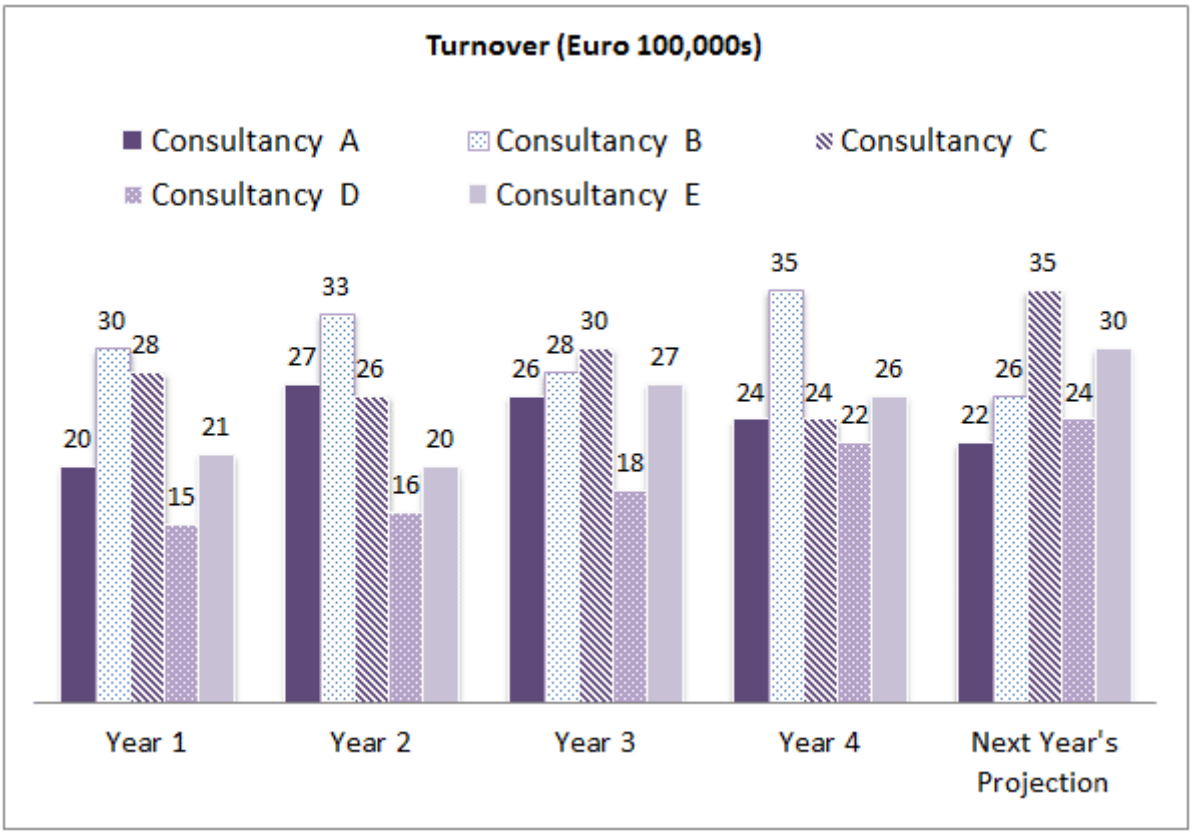
	Exchange Rate (to the £)				
	Week 1	Week 2	Week 3	Week 4	Week 5
Euro €	1.2	1.26	1.3	1.34	1.28
US $	1.64	1.69	1.74	1.84	1.76
Japanese Yen	123.2	128.6	134.8	135	128.4
South African Rand	13.4	13.8	13.2	13.6	14.2

Q3 During Week 1 a traveller splits £2,100 equally into US $, Japanese Yen and South African Rand. How many £ does the traveller have on Week 3 if all the currencies are converted back into £ and he is charged a 5% fee for each transaction from one currency into another (to the nearest £100)?

(A) £1,700
(B) £1,800
(C) £1,900
(D) £2,000
(E) £2,100

Q4 Which currency has shown the greatest proportionate change in value between Weeks 1 and 4?

(A) Euro
(B) US $
(C) Japanese Yen
(D) South African Rand
(E) Can't tell from data

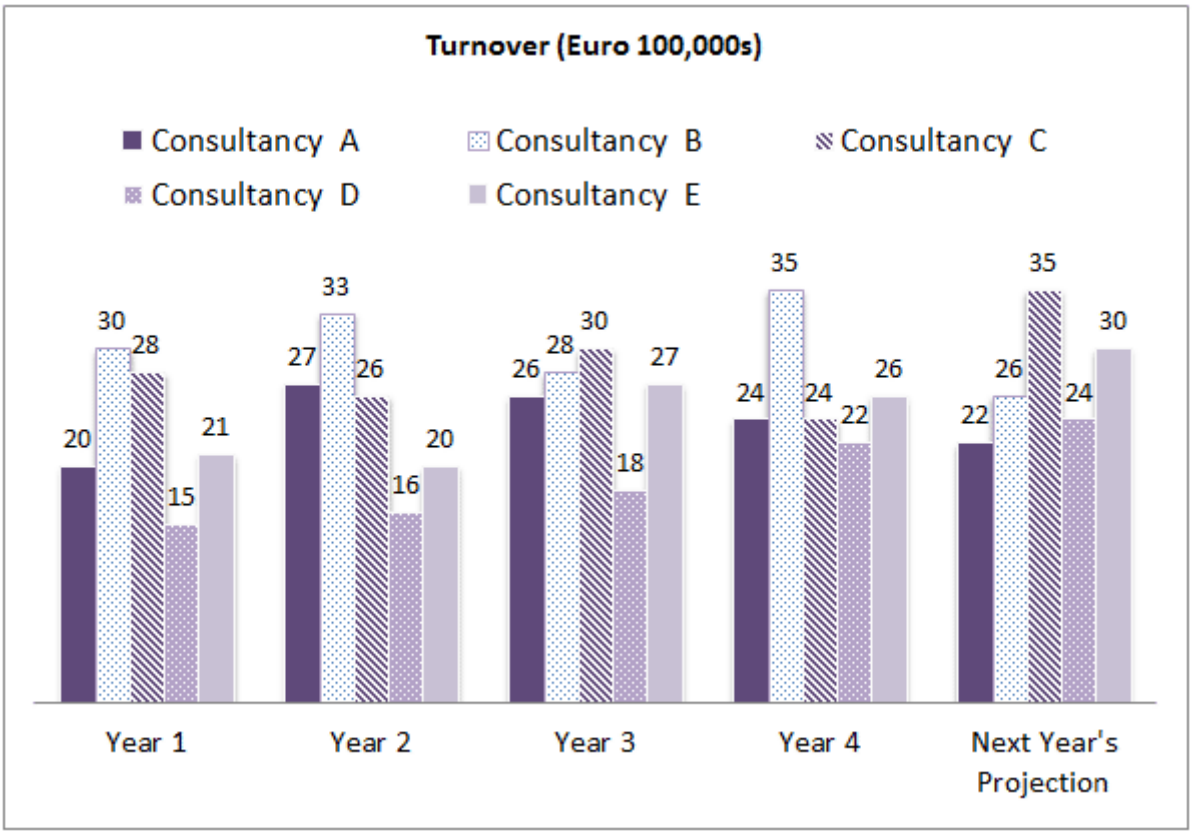


Q5 Next Year's turnover projection for Consultancies A-E combined represents what proportional change on Year 4's turnover for Consultancies A-E?

(A) 3.6%
(B) 4.2%
(C) 4.6%
(D) 5.2%
(E) 5.6%

Q6 The turnover target for Consultancy B over the 5 year period shown is 16.5 million. By how much does turnover need to exceed Next Year's Projected turnover in order for the target to be met?

(A) 1.0 million
(B) 1.1 million
(C) 1.2 million
(D) 1.3 million
(E) None of these

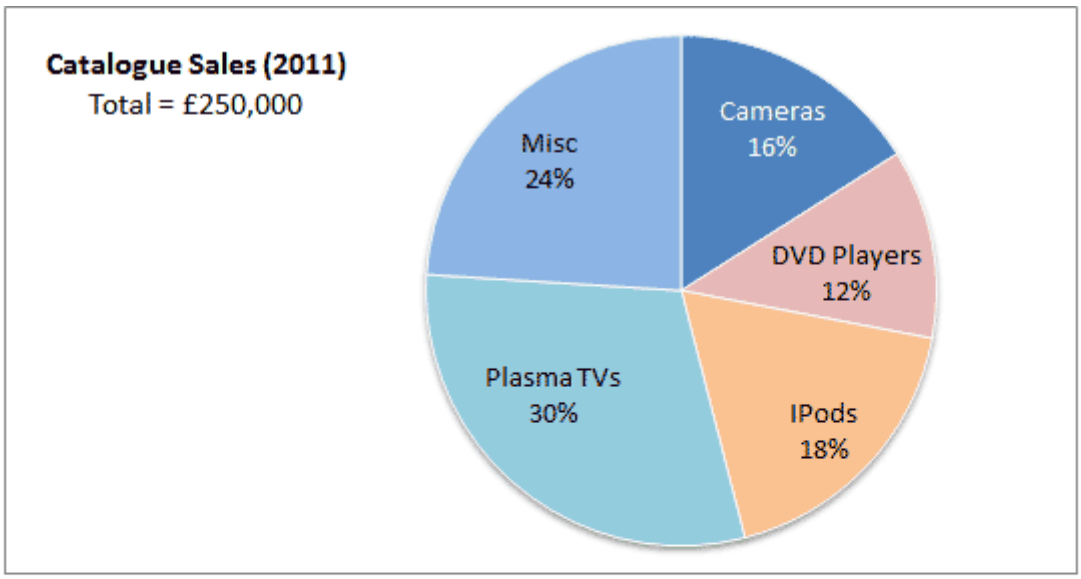


Q7 Next year, which company is projecting the smallest percentage change in its turnover?

(A) Consultancy A
(B) Consultancy B
(C) Consultancy C
(D) Consultancy D
(E) Consultancy E

Q8 What is the ratio of Year 3's Consultancy C's turnover to Consultancy E's turnover?

(A) 2 : 5
(B) 4 : 7
(C) 5 : 7
(D) 10 : 9
(E) 5 : 2



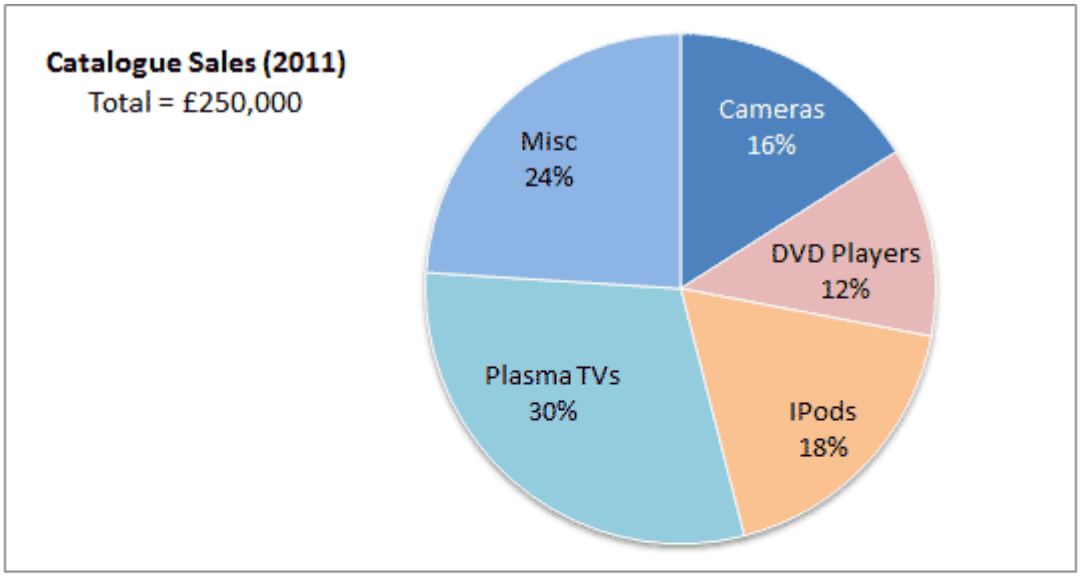
	Online Sales (2011)	High Street Sales (2011)
Cameras	£553,000	£336,000
DVD Players	£808,000	£483,000
IPods	£852,000	£644,000
Plasma TVs	£325,000	£456,000
Misc	£575,000	£678,000
Total	£3,113,000	£2,597,000

Q9 What is the difference in value between total sales for IPods compared to cameras?

(A) £912,000
(B) £812,000
(C) £712,000
(D) £612,000
(E) £512,000

Q10 If the High Street and Catalogue sales of DVD Players had been made online, what % of total Online sales would DVD Players represent?

(A) 28%
(B) 30%
(C) 32%
(D) 34%
(E) 36%



	Online Sales (2011)	High Street Sales (2011)
Cameras	£553,000	£336,000
DVD Players	£808,000	£483,000
IPods	£852,000	£644,000
Plasma TVs	£325,000	£456,000
Misc	£575,000	£678,000
Total	£3,113,000	£2,597,000

Q11 In 2012 total Catalogue sales are forecast to increase by 1/4, total Online sales to increase by a 1/5th, and High Street sales to decrease by 12%. What will be the 2012 sales for Catalogue, Online and High Street combined (to the nearest £1,000)?

(A) £5,597,000
(B) £6,285,000
(C) £6,333,000
(D) £6,433,000
(E) £6,613,000

Q12 The profit made from selling cameras online compared to the High Street is in the ratio 9:7, and 15% of online camera sales is profit. What is the 2011 profit for High Street camera sales?

(A) £36,291
(B) £64,517
(C) £66,980
(D) £72,428
(E) £82,950

Expenses by Department (£)	Number of staff	Quarter				Annual Expense Budget
		1	2	3	4	
HR	3	1,053	1,680	1,305	1,346	6,500
Marketing	6	4,790	3,706	3,652	4,309	16,000
Sales	12	6,825	6,021	5,091	5,245	22,500
IT	5	1,160	1,042	938	956	4,500
Finance	7	4,257	4,830	4,545	4,463	20,000
R&D	4	1,169	1,009	1,755	1,821	6,000

Q13 If the annual expense budget was evenly allocated for each Quarter, which Department is under budget by the highest amount in Quarter 4?

(A) HR
(B) Marketing
(C) Sales
(D) Finance
(E) R&D

Q14 60% of the Sales Department's budgets for Quarters 1 and 4 was for attending a Sales Conference. The remainder of the budget was split equally between accommodation and travel costs. What were the Sales Department's travel costs for Quarters 1 and 4 combined?

(A) £2,414
(B) £2,500
(C) £3,500
(D) £4,828
(E) Can't tell from the data

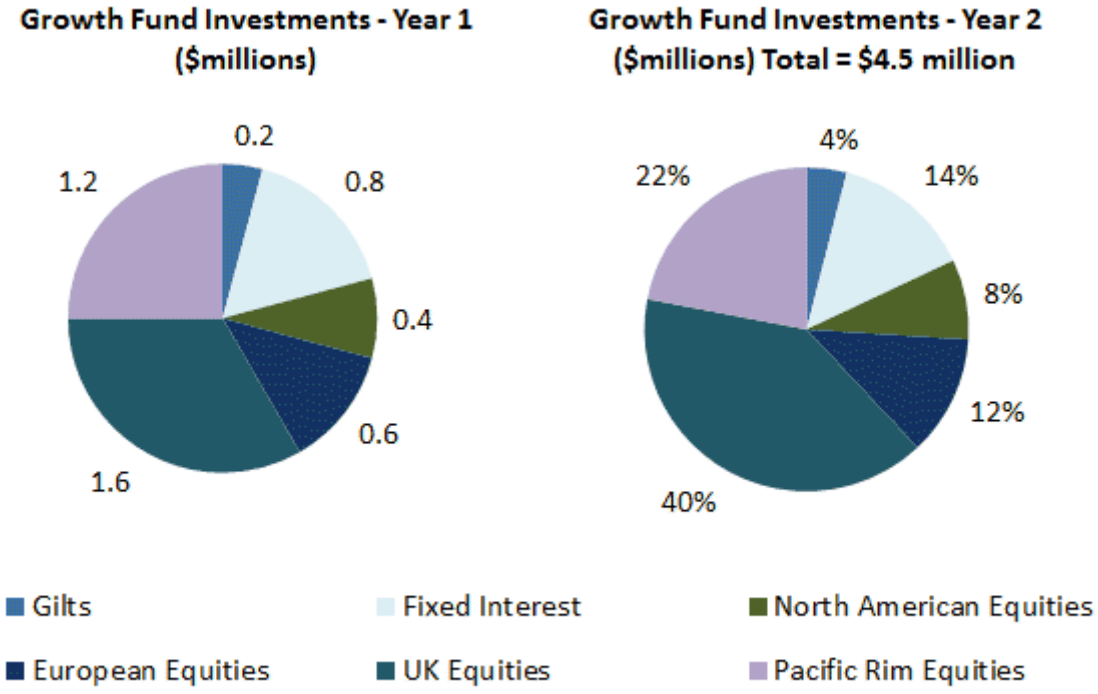
Expenses by Department (£)	Number of staff	Quarter				Annual Expense Budget
		1	2	3	4	
HR	3	1,053	1,680	1,305	1,346	6,500
Marketing	6	4,790	3,706	3,652	4,309	16,000
Sales	12	6,825	6,021	5,091	5,245	22,500
IT	5	1,160	1,042	938	956	4,500
Finance	7	4,257	4,830	4,545	4,463	20,000
R&D	4	1,169	1,009	1,755	1,821	6,000

Q15 The Finance Department has receipts for £14,476 of its annual expenses. What percentage of the Finance Department's annual expenses do not have receipts?

(A) 5%
(B) 10%
(C) 15%
(D) 20%
(E) 25%

Q16 If the percentage changes in expenses that each Department exhibited between Quarters 3-4 continued into the first quarter of the next year, what would be that quarter's total expenses (to the nearest £100)?

(A) £17,100
(B) £19,100
(C) £19,600
(D) £20,600
(E) None of these

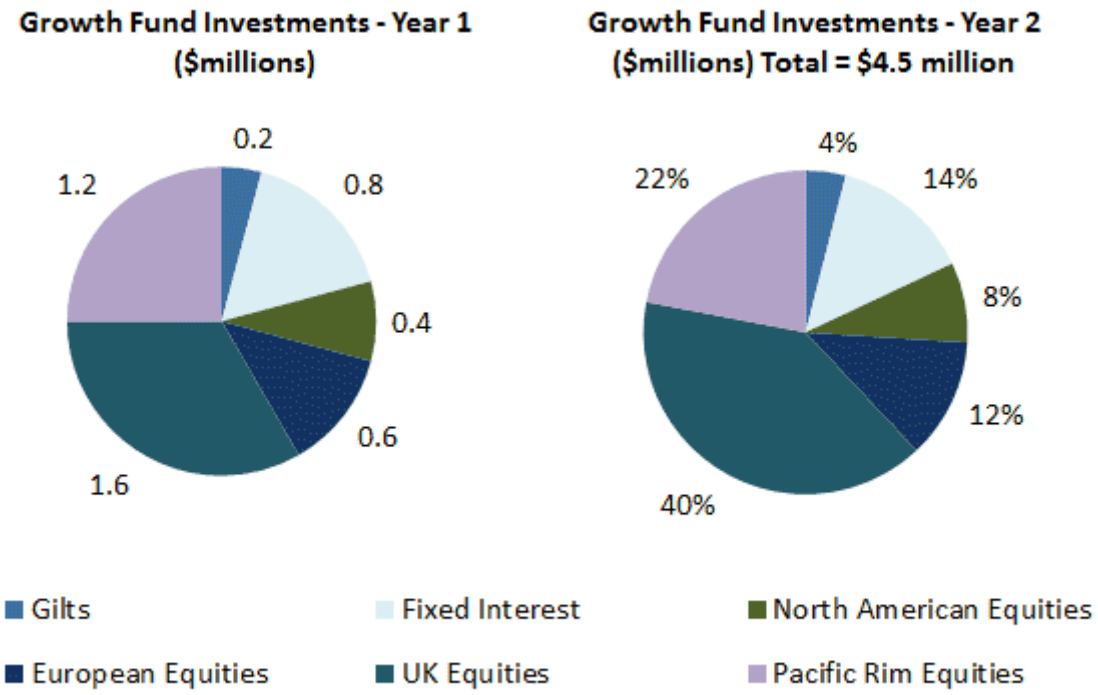


Q17 What was Year 2's decrease in the amount invested in North American and European Equities compared to Year 1?

(A) $10,000
(B) $100,000
(C) $110,000
(D) $111,000
(E) $111,100

Q18 Which type of investment in Year 2 shows the highest proportional discrepancy from the percentage of overall Growth Fund value that that type of investment made up in Year 1? Which type of investment shows the largest difference between Year 1 and Year 2 in the proportion it contributed to the total Growth Fund?

(A) Gilts
(B) Fixed interest
(C) North American Equities
(D) UK Equities
(E) Pacific Rim Equities



Q19 If the proportional change in the Growth Fund between Year 1 and Year 2 continued over subsequent years, what would be the projected Growth Fund value in Year 6?

(A) $3.48 million
(B) $3.51 million
(C) $3.71 million
(D) $5.73 million
(E) $5.95 million

Q20 In Year 3 the percentage of the Growth Fund held in each investment type is the same as in Year 1. The total value of the Growth Fund increases by 14% of the Year 2 value. What is the value of Year 3's holding in UK Equities?

(A) $1,530,000
(B) $1,710,000
(C) $1,710,000
(D) $2,040,000
(E) $2,030,000

Numerical Test 3

Solutions Booklet

	Exchange Rate (to the £)				
	Week 1	Week 2	Week 3	Week 4	Week 5
Euro €	1.2	1.26	1.3	1.34	1.28
US $	1.64	1.69	1.74	1.84	1.76
Japanese Yen	123.2	128.6	134.8	135	128.4
South African Rand	13.4	13.8	13.2	13.6	14.2

Q1 How much is 5,000 South African Rand worth in Week 4 in US $?

(A) $199.81

(B) $367.65

(C) $476.65

(D) $599.18

(E) $676.48

Step 1 *– Convert from Rand in to £*

5,000 / 13.6 = 367.65

Step 2 *– Convert from £ in to US $*

367.65 x 1.84 = $676.48

Thus the correct answer is (E), $676.48

	Exchange Rate (to the £)				
	Week 1	Week 2	Week 3	Week 4	Week 5
Euro €	1.2	1.26	1.3	1.34	1.28
US $	1.64	1.69	1.74	1.84	1.76
Japanese Yen	123.2	128.6	134.8	135	128.4
South African Rand	13.4	13.8	13.2	13.6	14.2

Q2 In Week two 10,000 Japanese Yen is converted into £. In Week 5 this is converted into what value in Euros?

(A) 110.00
(B) 104.82
(C) 99.53
(D) 77.76
(E) 60.75

Step 1 *– Convert into £ (using Week 2 figures)*
10,000 / 128.6 = £77.76

Step 2 *– Convert into Euros (using Week 5 figures)*
£77.76 x 1.28 = 99.53

Thus the correct answer is (C), 99.53

	Exchange Rate (to the £)				
	Week 1	Week 2	Week 3	Week 4	Week 5
Euro €	1.2	1.26	1.3	1.34	1.28
US $	1.64	1.69	1.74	1.84	1.76
Japanese Yen	123.2	128.6	134.8	135	128.4
South African Rand	13.4	13.8	13.2	13.6	14.2

Q3 During Week 1 a traveller splits £2,100 equally into US $, Japanese Yen and South African Rand. How many £ does the traveller have on Week 3 if all the currencies are converted back into £ and he is charged a 5% fee for each transaction from one currency into another (to the nearest £100)?

(A) £1,700
(B) £1,800
(C) £1,900
(D) £2,000
(E) £2,100

Step 1 *- splits £2,100 equally into US $, Japanese Yen and South African Rand*
£2,100 / 3 = £700

Step 2 *– Calculate the amount of US $, Japanese Yen and South African Rand (Week 1)*
US $: £700 x 1.64 = $1,148
Japanese Yen: £700 x 123.2 = 86,240 Yen
South African Rand: £700 x 13.4 = 9,380 Rand

Step 3 *– Deduct a 5% charge for each currency*
$1,148 x .95 = $1,090.6
86,240 Yen x .95 = 81,928 Yen
9,380 Rand x .95 = 8,911 Rand

Step 4 *– Convert back into £ (Week 3)*
$1,090.6 / 1.74 = £626.78
81928 Yen / 134.8 = £607.77
8911 Rand / 13.2 = £675.08
Total = £1,909.626.
Deduct a second 5% for the transaction fee. £1,909.63 x 0.95 = £1,814 = £1,800 (to the nearest £100)

Thus the correct answer is (B), £1,800

	Exchange Rate (to the £)				
	Week 1	Week 2	Week 3	Week 4	Week 5
Euro €	1.2	1.26	1.3	1.34	1.28
US $	1.64	1.69	1.74	1.84	1.76
Japanese Yen	123.2	128.6	134.8	135	128.4
South African Rand	13.4	13.8	13.2	13.6	14.2

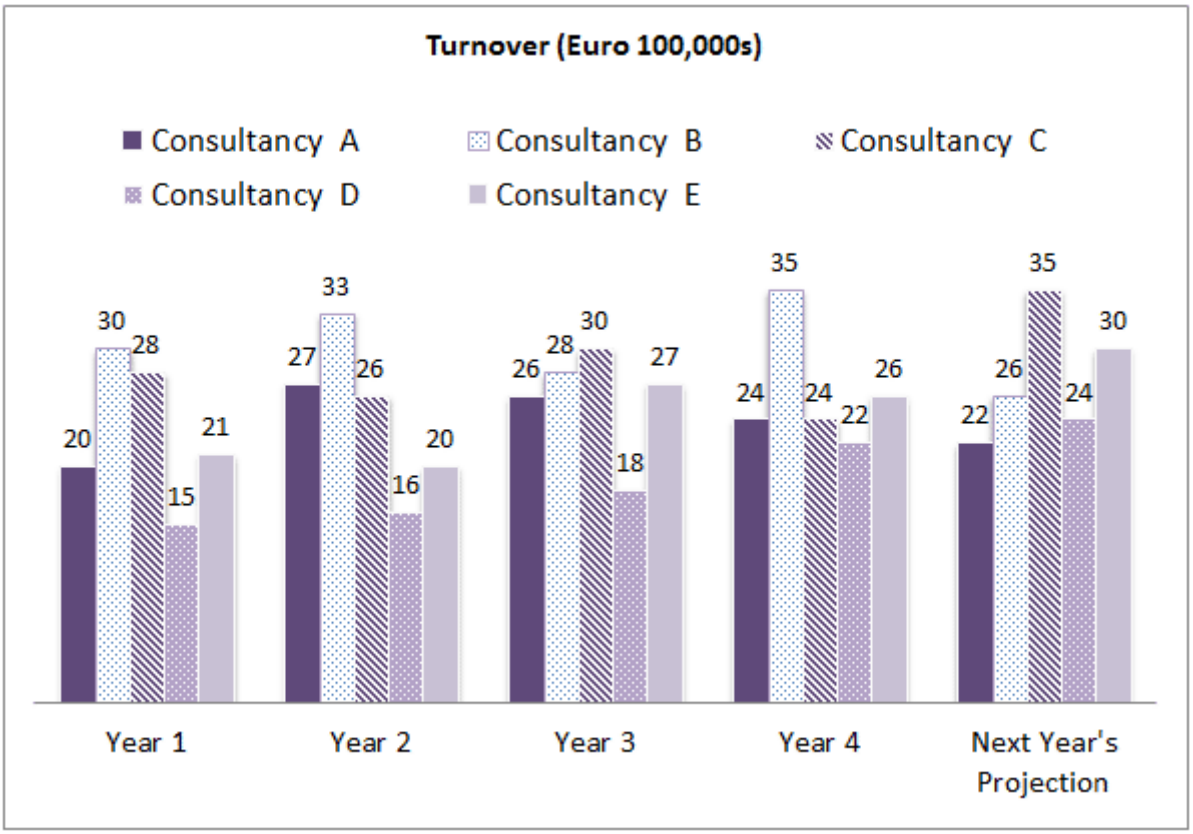
Q4 Which currency has shown the greatest proportionate change in value between Weeks 1 and 4?

(A) Euro
(B) US $
(C) Japanese Yen
(D) South African Rand
(E) Can't tell from data

Step 1 *– Calculate the % change in value for each currency between Weeks 1 and 4*

Euro: (1.34 – 1.20) / 1.20 = 0.117. Note: some people find it quicker to calculate 1.34 / 1.2 but both methods produce the same answer.
US $: (1.84 – 1.64) / 1.64 = 0.122
Japanese Yen: (135.0 – 123.2) / 123.2 = 0.096
South African Rand: (13.6 – 13.4) / 13.4 = 0.015

Thus the correct answer is (B), US $



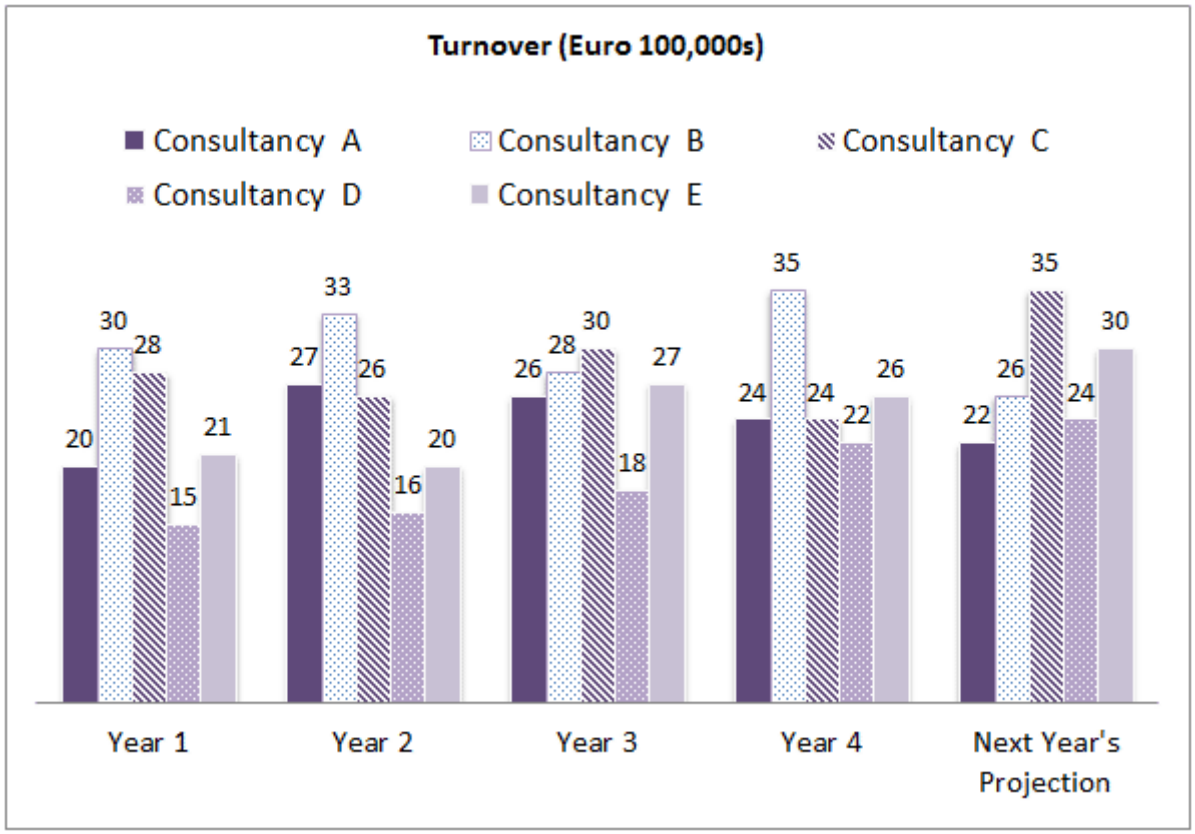
Q5 Next Year's turnover projection for Consultancies A-E combined represents what proportional change on Year 4's turnover for Consultancies A-E?

(A) 3.6%
(B) 4.2%
(C) 4.6%
(D) 5.2%
(E) 5.6%

Step 1 *– Calculate Year 4's total*

24 + 35 + 24 + 22 + 26 = 131
Step 2 – Calculate Next Year's Projected total turnover
22 + 26 + 35 + 24 + 30 = 137
Step 3 – Calculate the % increase
6 / 131 = 4.6%

So the correct answer is (C) 4.6%



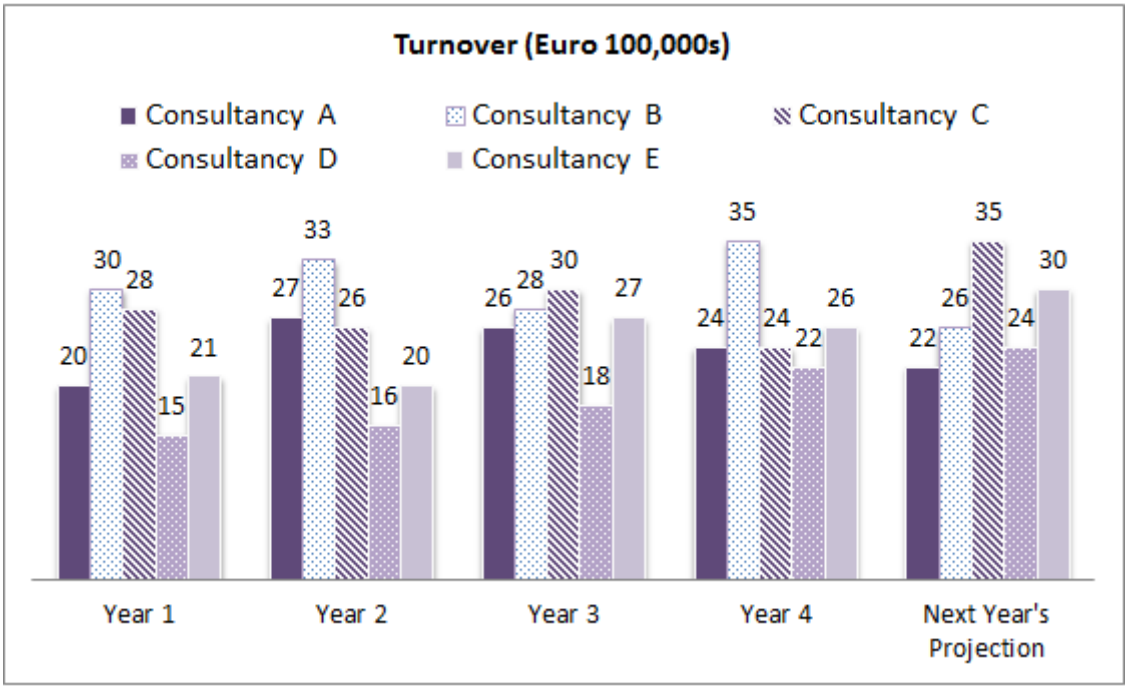
Q6 If, in Year 3, Consultancies A to D represent 60% of the marketplace by value of sales, what is the value of the marketplace excluding Consultancies A-E?

(A) 4.0 million
(B) 4.1 million
(C) 4.2 million
(D) 4.3 million
(E) Can't tell from the data

Step 1 *– Calculate the total sales for Consultancies A to D in Year 3*
26 + 28 + 30 + 18 = 102

Step 2 *– Calculate the part of the market that excludes Consultancies A-E*
We are told that 102 = 60%
So 100% = 102/60 x 100 = 170
Now 170 – (26 + 28 + 30 + 18 + 27) = 41 (100,000s) = 4.1 million

Thus the correct answer is (B), 4.1 million



Q7 Next year, which company is projecting the smallest percentage change in its turnover?

(A) Consultancy A
(B) Consultancy B
(C) Consultancy C
(D) Consultancy D
(E) Consultancy E

Step 1 *– Calculate the % increase in turnover projected for each company*
Consultancy A: 2 / 24 x 100% = 8.3%
Consultancy B: 9 / 35 x 100% = 25.7%
Consultancy C: 11 / 24 x 100% = 45.8%
Consultancy D: 2 / 22 x 100% = 9%
Consultancy E: 4 / 26 x 100% = 15.4%

Tip: *just by inspecting the data you could probably see that the answer is going to be either Consultancy A or D, so you could save time by calculating just these.*

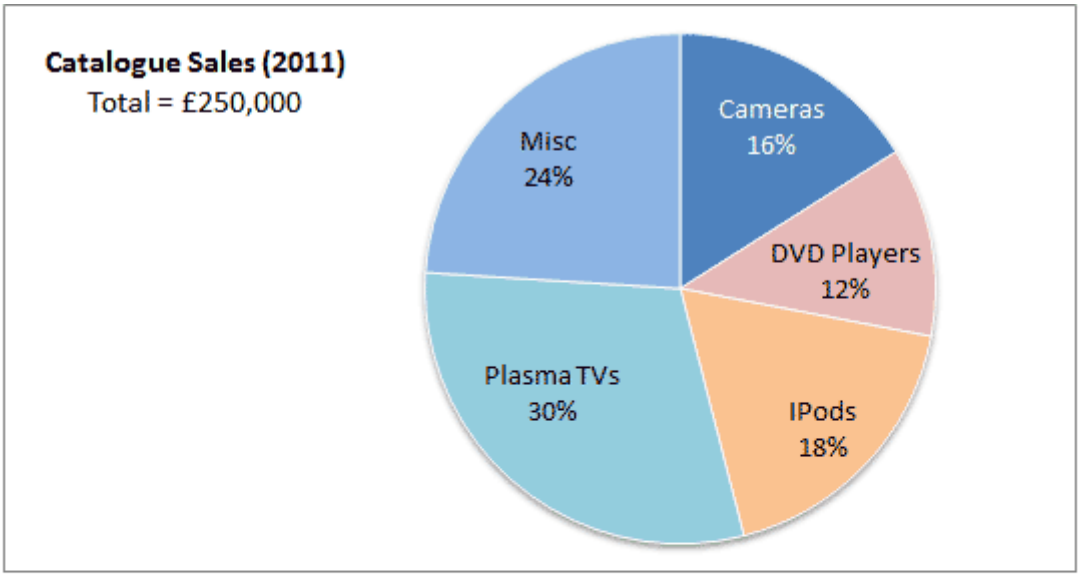
Thus the correct answer is (A), Consultancy A

Q8 What is the ratio of Year 3's Consultancy C's turnover to Consultancy E's turnover?

(A) 2 : 5
(B) 4 : 7
(C) 5 : 7
(D) 10 : 9
(E) 5 : 2

Consultancy C : Consultancy E
= 30 : 27 = 10 : 9

Thus the correct answer is (D), 10 : 9



	Online Sales (2011)	High Street Sales (2011)
Cameras	£553,000	£336,000
DVD Players	£808,000	£483,000
IPods	£852,000	£644,000
Plasma TVs	£325,000	£456,000
Misc	£575,000	£678,000
Total	£3,113,000	£2,597,000

Q9 What is the difference in value between total sales for IPods compared to cameras?

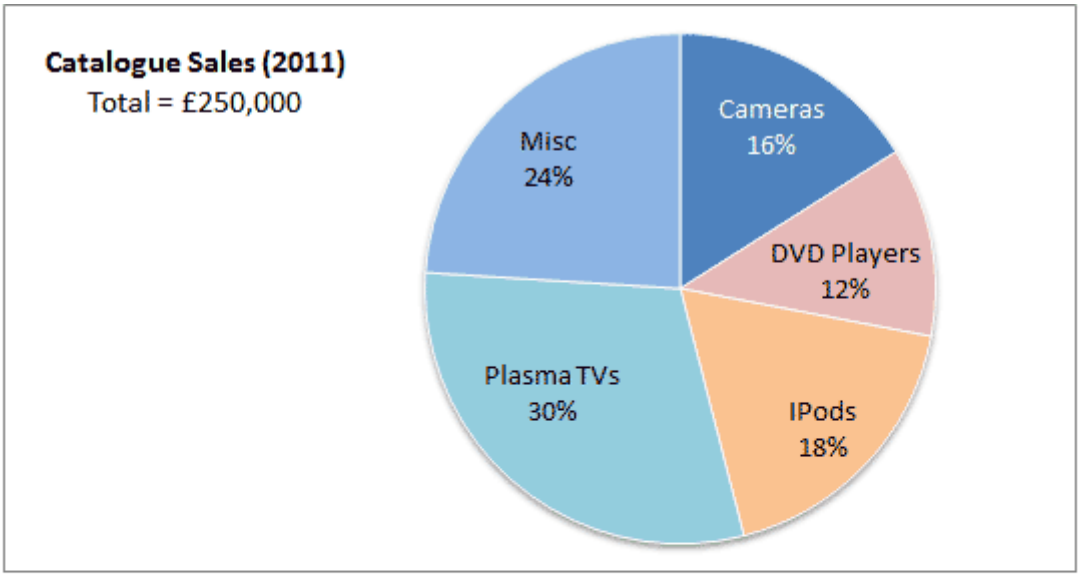
(A) £912,000
(B) £812,000
(C) £712,000
(D) £612,000
(E) £512,000

Step 1 *– Calculate the total sales for IPods*
£852,000 + £644,000 + (18% x £250,000) = £1,541,000

Step 2 *– Calculate the total sales for cameras*
£336,000 + £553,000 + (16% x £250,000) = £929,000

Step 3 *– Calculate the difference*
£1,541,000 - £929,000 = £612,000

Thus the correct answer is (D), £612,000



	Online Sales (2011)	High Street Sales (2011)
Cameras	£553,000	£336,000
DVD Players	£808,000	£483,000
IPods	£852,000	£644,000
Plasma TVs	£325,000	£456,000
Misc	£575,000	£678,000
Total	£3,113,000	£2,597,000

Q10 If the High Street and Catalogue sales of DVD Players had been made online, what % of total Online sales would DVD Players represent?

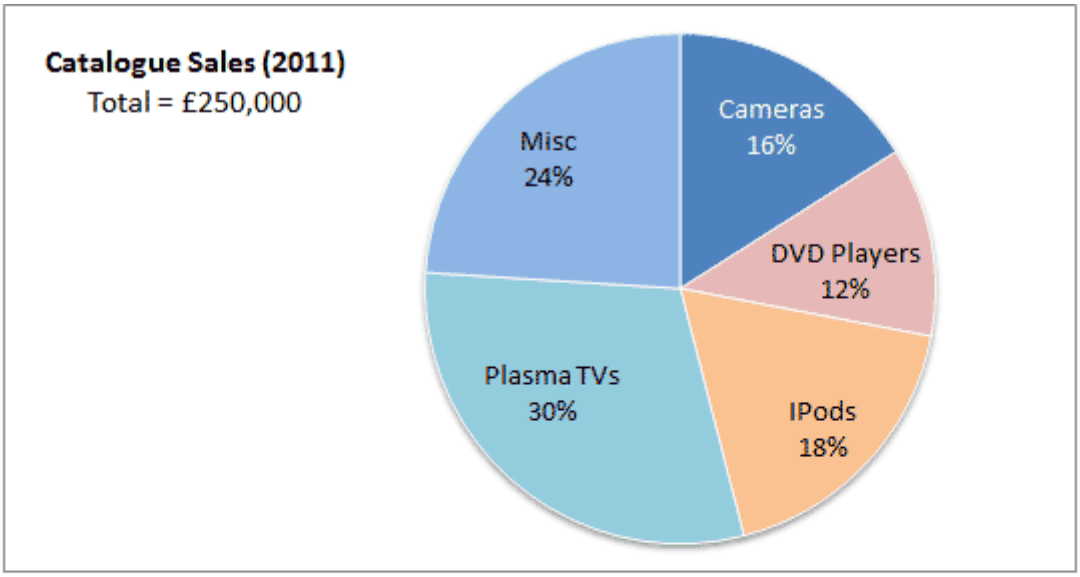
(A) 28%
(B) 30%
(C) 32%
(D) 34%
(E) 36%

Step 1 *– Calculate the value of catalogue sales of DVDs*
£250,000 x 12% = £30,000

Step 2 *– Sum the High Street and catalogue sales of DVD players*
£30,000 + £483,000 = £513,000

Step 3 *– Calculate the % of DVD player sales that are online*
£808,000 + £513,000 / (£852,000 + £808,000 + £513,000 + £553,000 + £325,000 + £575,000)
= £1,321,000 / £3,626,000

Thus the correct answer is (E), 36%



	Online Sales (2011)	High Street Sales (2011)
Cameras	£553,000	£336,000
DVD Players	£808,000	£483,000
IPods	£852,000	£644,000
Plasma TVs	£325,000	£456,000
Misc	£575,000	£678,000
Total	£3,113,000	£2,597,000

Q11 In 2012 total Catalogue sales are forecast to increase by 1/4, total Online sales to increase by a 1/5th, and High Street sales to decrease by 12%. What will be the 2012 sales for Catalogue, Online and High Street combined (to the nearest £1,000)?

(A) £5,597,000
(B) £6,285,000
(C) £6,333,000
(D) £6,433,000
(E) £6,613,000

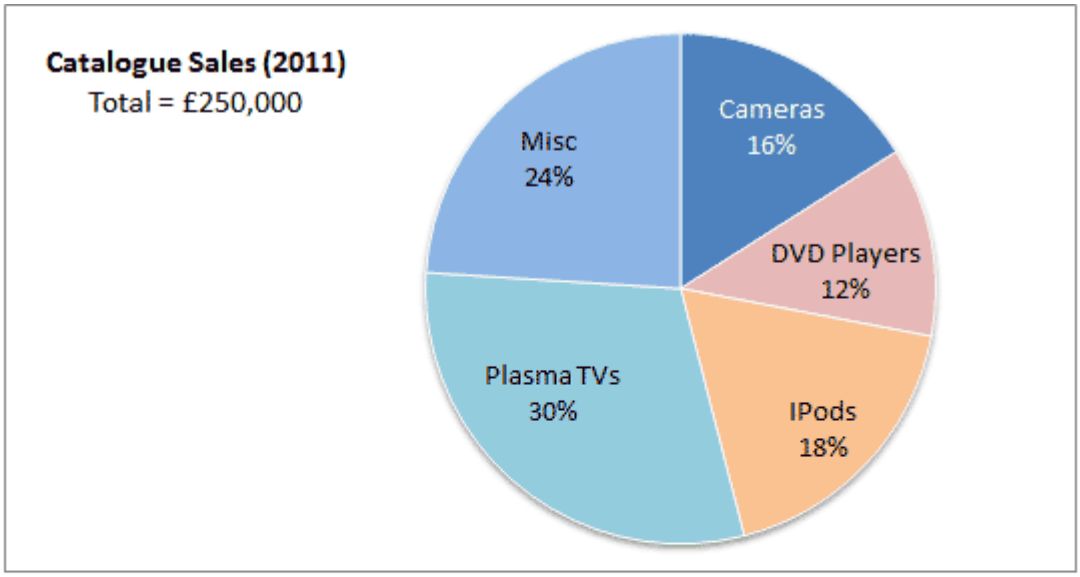
Step 1 *– Calculate the total 2011 sales (Online and for the High Street)*
Online: £852,000 + £808,000 + £553,000 + £325,000 + £575,000 = £3,113,000
High Street: £644,000 + £483,000 + £336,000 + £456,000 + £678,000 = £2,597,000

Step 2 *– Calculate the total 2012 sales (Online and for the High Street)*
Online: £3,113,000 x 1.2 = £3,735,600
High Street: £2,597,000 x 88% = £2,285,360

Step 3 *– Calculate the total 2012 sales (Catalogue)*
£250,000 x 1.25 = £312,500

Step 4 *– Sum the total January sales (Online, Catalogue and High Street)*
£3,735,600 + £2,285,360 + £312,500 = £6,333,460
= £6,333,000 (to the nearest £1,000)

Thus the correct answer is (C), £6,333,000



	Online Sales (2011)	High Street Sales (2011)
Cameras	£553,000	£336,000
DVD Players	£808,000	£483,000
IPods	£852,000	£644,000
Plasma TVs	£325,000	£456,000
Misc	£575,000	£678,000
Total	£3,113,000	£2,597,000

Q12 The profit made from selling cameras online compared to the High Street is in the ratio 9:7, and 15% of online camera sales is profit. What is the 2011 profit for High Street camera sales?

(A) £36,291
(B) £64,517
(C) £66,980
(D) £72,428
(E) £82,950

Step 1 *– Calculate the profit for online camera sales*
15% x £553,000 = £82,950

Step 2 *– Calculate the profit for High Street camera sales*
£82,950 x 7 / 9 = £64,517

Thus the correct answer is (B), £64,517

Expenses by Department (£)	Number of staff	Quarter				Annual Expense Budget
		1	2	3	4	
HR	3	1,053	1,680	1,305	1,346	6,500
Marketing	6	4,790	3,706	3,652	4,309	16,000
Sales	12	6,825	6,021	5,091	5,245	22,500
IT	5	1,160	1,042	938	956	4,500
Finance	7	4,257	4,830	4,545	4,463	20,000
R&D	4	1,169	1,009	1,755	1,821	6,000

Q13 If the annual expense budget was evenly allocated for each Quarter, which Department is under budget by the highest amount in Quarter 4?

(A) HR
(B) Marketing
(C) Sales
(D) Finance
(E) R&D

Step 1 *– Calculate the quarterly expense budgets for each Department (excluding IT which is not shown in the answer options)*
HR: 6,500 / 4 = 1,625
Marketing: 16,000 / 4 = 4,000
Sales: 22,500 / 4 = 5,625
Finance: 20,000 / 4 = 5,000
R&D: 6,000 / 4 = 1,500

Step 2 *– Compare to the Quarter 4 figures for each Dept.*
HR: 1,625 – 1,346 = £279
Marketing is over budget
Sales: 5,625 – 5,245 = £380
Finance: 5,000 – 4,463 = £537
R&D is over budget

Thus the correct answer is (D), Finance

Expenses by Department (£)	Number of staff	Quarter				Annual Expense Budget
		1	2	3	4	
HR	3	1,053	1,680	1,305	1,346	6,500
Marketing	6	4,790	3,706	3,652	4,309	16,000
Sales	12	6,825	6,021	5,091	5,245	22,500
IT	5	1,160	1,042	938	956	4,500
Finance	7	4,257	4,830	4,545	4,463	20,000
R&D	4	1,169	1,009	1,755	1,821	6,000

Q14 60% of the Sales Department's budgets for Quarters 1 and 4 was for attending a Sales Conference. The remainder of the budget was split equally between accommodation and travel costs. What were the Sales Department's travel costs for Quarters 1 and 4 combined?

(A) £2,414
(B) £2,500
(C) £3,500
(D) £4,828
(E) Can't tell from the data

Step 1 *– Calculate the % of budget for travel costs*
100% - 60% = 40%
40% / 2 = 20%
Step 2 – Calculate the figure that this % represents
20% x (6,825 + 5,245) = 20% x 12,070 = £2,414

Thus the correct answer is (A), £2,414

Q15 The Finance Department has receipts for £14,476 of its annual expenses. What percentage of the Finance Department's annual expenses do not have receipts?

(A) 5%
(B) 10%
(C) 15%
(D) 20%
(E) 25%

Step 1 *– Total the Finance Department's expenses for all 4 quarters*
4,257 + 4,830 + 4,545 + 4,463 = 18,095

Step 2 *– Calculate the % for which there are receipts*
14,476 / 18,095 = 80%
Step 3 - Calculate the % for which there are no receipts
100 – 20 = 20%

Thus the correct answer is (D), 20%

Expenses by Department (£)	Number of staff	Quarter				Annual Expense Budget
		1	2	3	4	
HR	3	1,053	1,680	1,305	1,346	6,500
Marketing	6	4,790	3,706	3,652	4,309	16,000
Sales	12	6,825	6,021	5,091	5,245	22,500
IT	5	1,160	1,042	938	956	4,500
Finance	7	4,257	4,830	4,545	4,463	20,000
R&D	4	1,169	1,009	1,755	1,821	6,000

Q16 If the percentage changes in expenses that each Department exhibited between Quarters 3-4 continued into the first quarter of the next year, what would be that quarter's total expenses (to the nearest £100)?

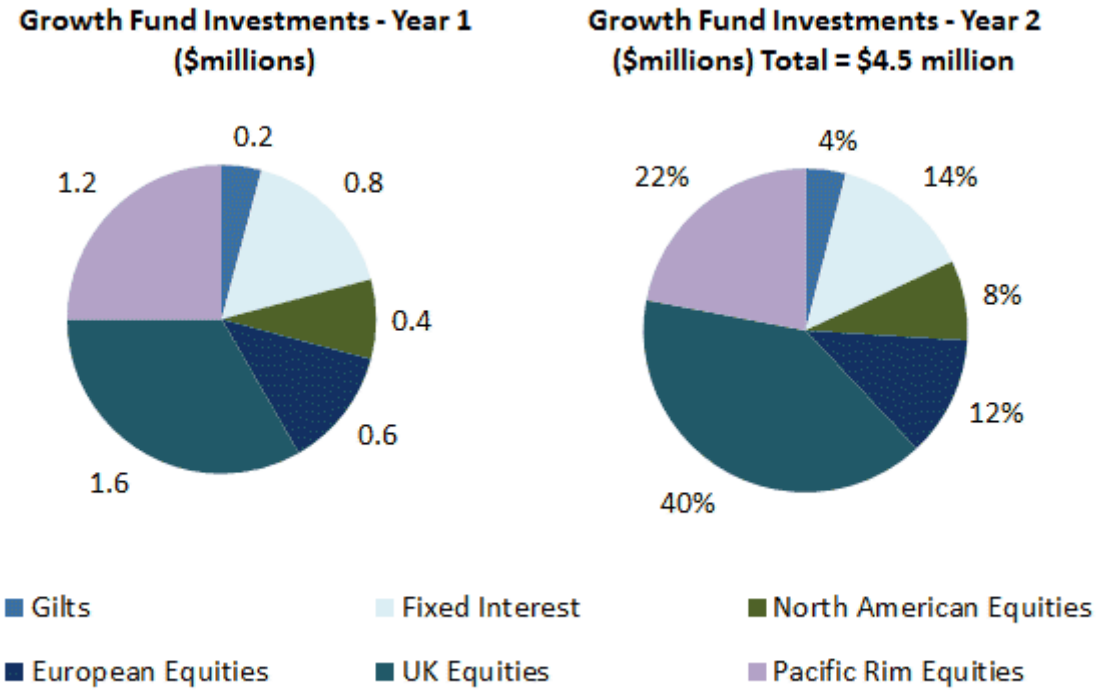
(A) £17,100
(B) £19,100
(C) £19,600
(D) £20,600
(E) None of these

Step 1 *– Calculate the % change by Department between Quarters 3-4*
HR: (1,346 – 1,305) / 1,305 = 3.14%. Note: some people find it quicker to calculate 1,346 ¸ 1,305 = 1.0314
Marketing: (4,309 – 3,652) / 4,309 = 17.99%
Sales: (5,245 – 5,091) / 5,245 = 3.02%
IT: (956 – 938) / 956 = 1.92%
Finance: (4,463 – 4,545) / 4,463 = - 1.80%
R&D: (1,821 – 1,755) / 1,821 = 3.76%

Step 2 *– Calculate the next quarter's expenses for each department*
HR: 103.14% x 1,346 = 1,1388
Marketing: 4,309 x 117.99% = 5,084
Sales: 5,245 x 103.02% = 5,403.7
IT: 956 x 101.92% = 974
Finance: 4,463 x 98.2% = 4,383
R&D: 1,821 x 103.76% = 1,889

Step 3 *- Calculate the next quarter's total expenses*
1,388 + 5,084 + 5,404 + 974 + 4,383 + 1,889 = £19,122

Thus the correct answer is (B), £19,100



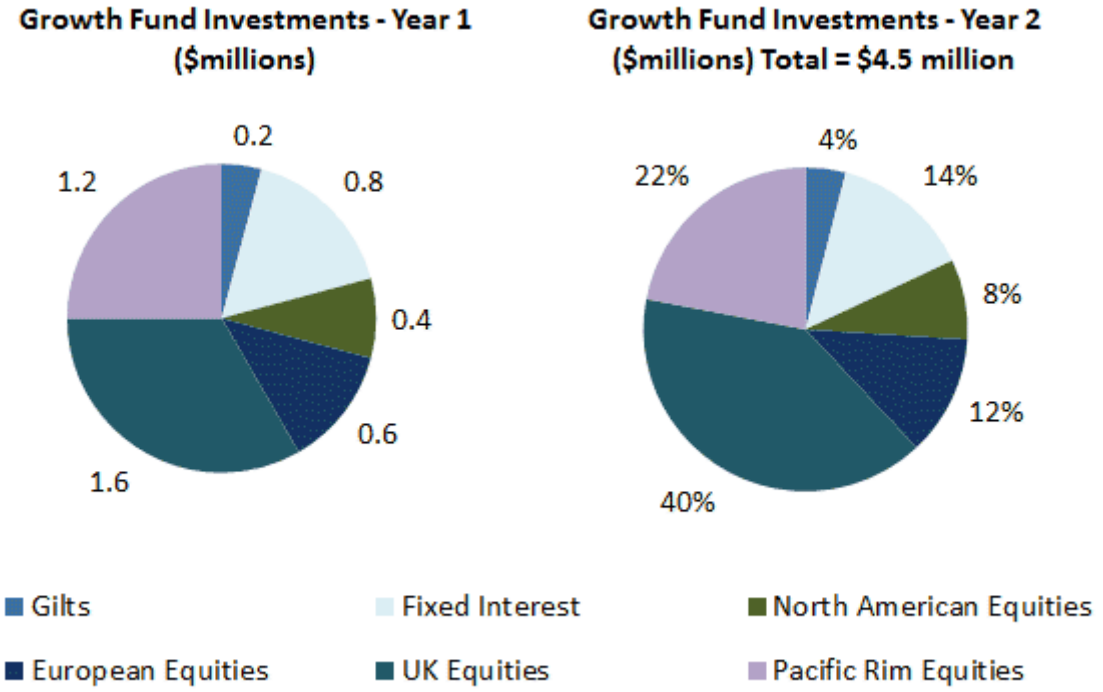
Q17 What was Year 2's decrease in the amount invested in North American and European Equities compared to Year 1?

(A) $10,000
(B) $100,000
(C) $110,000
(D) $111,000
(E) $111,100

Step 1 *– Calculate Year 2's investments in North American and European Equities*
North American: $4.5million x 8% = $360,000
European: $4.5million x 12% = $540,000

Step 2 *- Calculate Year 2's decrease compared to Year 1*
North American change + European change
= ($400,000 - $360,000) + ($600,000 - $540,000)
= $100,000

Thus the correct answer is (A), $100,000



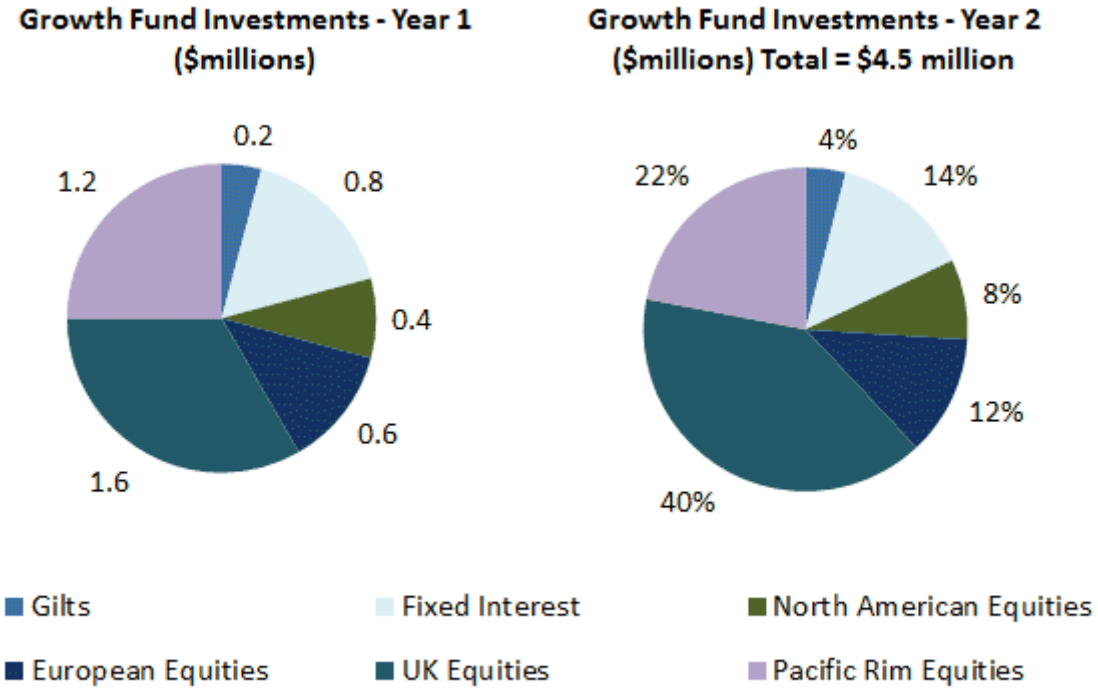
Q18 Which type of investment shows the largest difference between Year 1 and Year 2 in the proportion it contributed to the total Growth Fund?

(A) Gilts
(B) Fixed interest
(C) North American Equities
(D) UK Equities
(E) Pacific Rim Equities

Step 1 *– calculate the proportion of the fund that each investment made up in Year 1*
Gilts = 0.2 / 4.8 = 4.17%
Fixed Interest = 0.8 / 4.8 = 16.67%
North American Equities = 0.4 / 4.8 = 8.33%
European Equities = 0.6 / 4.8 = 12.5%
UK Eequities = 1.6 / 4.8 = 33.33%
Pacific Rim Equities = 1.2 / 4.8 = 25%

Step 2 *– compare these figures to the % figures shown in Year 2's pie-chart*
Gilts = 4.17% vs. 4%
Fixed Interest = 16.67% vs. 14%
North American Equities = 8.33% vs. 8%
European Equities = 12.5% vs. 12%
UK Equities = 33.33% vs. 40%
Pacific Rim Equities = 25% vs. 22%

Thus the correct answer is (D), UK Equities



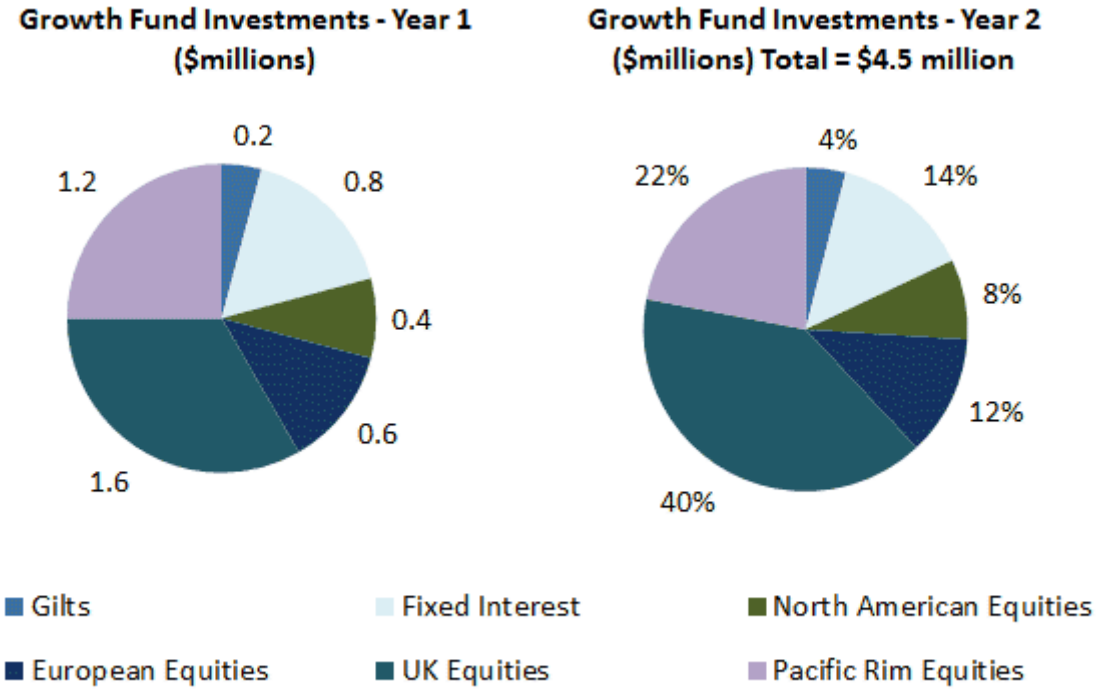
Q19 If the proportional change in the Growth Fund between Year 1 and Year 2 continued over subsequent years, what would be the projected Growth Fund value in Year 6?

(A) $3.48 million
(B) $3.51 million
(C) $3.71 million
(D) $5.73 million
(E) $5.95 million

Step 1 *– Calculate the proportional change in the Growth Fund between Year 1 and 2*
(4.8 – 4.5) / 4.8 = - 6.25%

Step 2 *– Apply this % to calculate the growth Fund value each year up to Year 6*
Year 3: 93.75% x 4.5 = 4.2188
Year 4: 93.75% x 4.2188 = 3.955
Year 5: 93.75% x 3.955 = 3.708
Year 6: 93.75% x 3.708 = $3.476 million

Thus the correct answer is (A), $3.48 million



Q20 If in Year 2 the amount invested in Year 1's Fixed Interest fund had been sold and converted into European Equity funds, what is the value of European Equity funds in Year 2? (Assume no charges are incurred).

(A) $540,000
(B) $700,000
(C) $800,000
(D) $1.24 million
(E) $1.34 million

Step 1 *– Calculate the Year 2 amount of European Equity funds*
European Equity: 12% x $4.5 million = $540,000

Step 2 *- Sum the Year 1 Fixed Interest and Year 2 European Equity investments*
$800,000 + $540,000 = $1,340,000

Thus the correct answer is (E), $1.34 million

Numerical Reasoning

Test 4

Question Booklet

This numerical reasoning test comprises 20 questions, and you will have 17 minutes in which to correctly answer as many as you can. Calculators are permitted for this test, and it is recommended you have some rough paper to work on.

You will have to work quickly and accurately to perform well in this test. If you don't know the answer to a question, leave it and come back to it if you have time. Each question will have four possible answers, one of which is correct. You may click Back and Next during the test to review or skip questions.

You can submit your test at any time. If the time limit is up before you click submit the test will automatically be submitted with the answers you have selected. It is recommended to keep working until the time limit is up.

Try to find a time and place where you will not be interrupted during the test. When you are ready, begin the test.

	Sales (£millions)						
	US (Jan-June)	US (July-Dec)	Annual US Sales Target	EU (Jan-June)	EU (July-Dec)	Annual EU Sales Target	Worldwide Sales (Jan-Dec)
Product A	54.5	50.5	110	90.5	91.4	180	320
Product B	61.1	59.2	120	72.2	77.8	160	300
Product C	60.5	58	120	88	92.2	180	330
Product D	76.5	74.1	150	105.3	98.2	200	380
Product E	72.7	78.2	150	89.2	94.8	190	350

US annual sales tax: 24% on the first £130 million of sales, 0% thereafter.
EU annual sales tax: 22% on all sales.

Q1 For the five products combined there was a difference between total annual Sales and the total annual Sales Target. How did this difference compare for the US and the EU?

£27.1 million (US); £25.8 million (EU)
£638.3 million (US); £908.2 million (EU)
£4.7 million (US); £10.4 million (EU)
£271.7 million (US); £258.2 million (EU)
Can't tell

Q2 If the annual EU sales for Products B and C both comprise online: offline sales in a ratio of 2:3 then what are the online EU sales for Products B and C combined?

£198,120,000
£19,812,000
£13,208,000
£132,080,000
None of these

Q3 How much US and EU annual sales tax is due for Products B, C and D combined (to the nearest £million)?

£244 million £211 million £149 million £243 million £120 million

Q4 Which of the following represents the smallest amount?

Product B's change in EU sales between Jan-June and July-Dec
7% of Product D's US sales (Jan-June)
Product E's change in US sales between Jan-June and July-Dec
Average US Product A sales per month (July-Dec)
Average US Product C sales per month (Jan-June)

Share	Dividend paid (pence per Company Share)	Previous Day's Company Value* (£million)	Total Number of Company Shares (million)	Current Price Per Share (£)	Previous month's share price: Low (pence)	High (pence)
Relf plc	14	240	80	2.75	241	275
Studt Systems	8	171	55	3	238	352
Tombe	10	840	460	1.85	170	203
Xan Inc.	15	28	12	2.28	218	249
IWE Ltd	5	200	114	1.48	160	178

** Company Value = Price Per Share x Total Number of Company Shares*

Q5 A rights issue brings an additional 10% of Studt Systems shares to the market. If the current price per share drops by 8%, what is Studt Systems' new company value (to the nearest £million)?

£166 million £167 million £16.6 million £1,670,000 £169 million

Q6 At current prices, if the owner of 150,000 Studt Systems shares collected the dividend then sold the shares, how many Tombe shares could they buy with the proceeds (to the nearest 10,000)?

290,000 280,000 270,000 260,000 250,000

Q7 Which share has changed in price by the largest amount since the previous day?

Relf plc Studt Systems Xan Inc IWE Ltd Cannot Say

Q8 A day trader bought 50,000 Tombe shares at last month's low, received the Tombe dividend and then sold all these shares at last month's high. What was the approximate percentage gain or loss?

25.3%profit 19.4%profit 25.3% loss 20.5%loss 20.5% profit

Number of new mobile phone packages sold
(over the previous 12 months)

IK-Connections Ltd	Platinum package	Gold package	Silver package	Bronze package
Central Region stores	4,540	4,854	5,083	5,425
Northern Region stores	4,725	5,005	5,382	5,846
Southern Region stores	4,584	5,123	5,759	5,428
Western Region stores	4,682	4,759	4,956	4,869
Eastern Region stores	4,884	5,256	4,982	4,592
Cost of package *(per month)*	£40	£35	£30	£25

Q9 Which regional store sold the second highest number of new mobile phone contracts for the Platinum and Gold packages combined (over the previous 12 months)?

Central Northern Southern Eastern Western

Q10 What is the difference in revenue between the package with the lowest number of sales and the package with the highest number of sales over the 12 month period, across all regions combined?

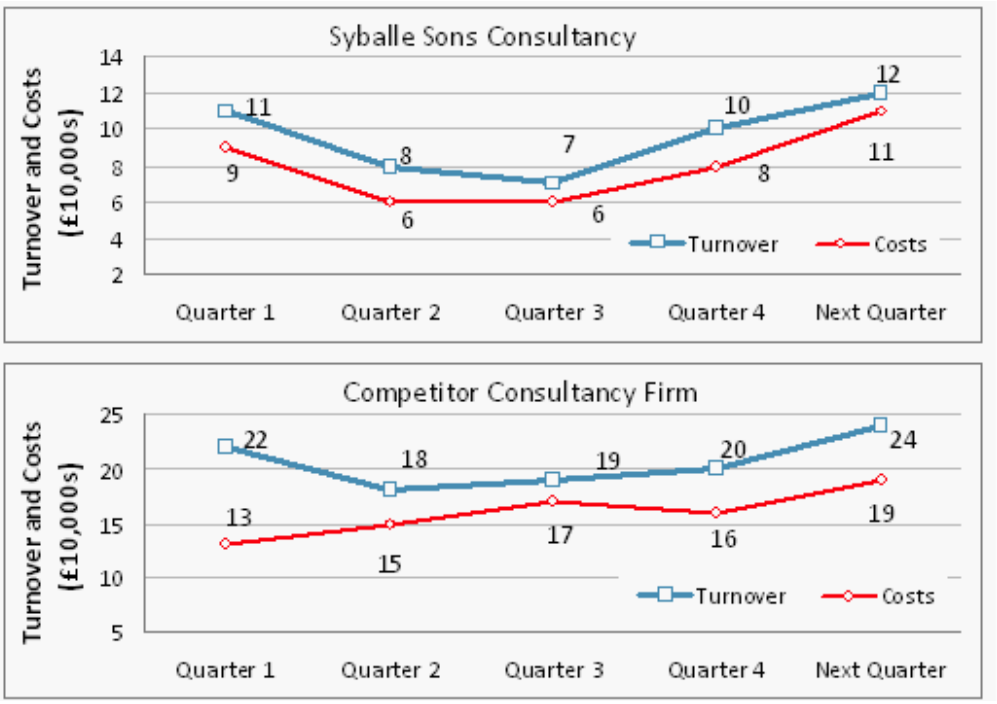
£151,740 £101,750 £15,400 £5,747 Cannot Say

Q11 What is the difference in average monthly sale values between the most and the least expensive packages?

£1,850 £2,745 £23,550 £27,450 £180,150

Q12 Assuming the only costs are those of the monthly package, what was the annual cost saving for a customer who switched from the Gold to the Bronze package?

£10 £50 £75 £120 £180



Q13 What is the average quarterly turnover for Syballe Sons compared to the Competitor Consultancy Firm across Quarters 1-4?

£90,000 Syballe Sons; £197,500 Competitor Consultancy Firm
£96,000 Syballe Sons; £200,000 Competitor Consultancy Firm
£90,000 Syballe Sons; £25,750 Competitor Consultancy Firm
£90,000 Syballe Sons; £19,750 Competitor Consultancy Firm
£96,000 Syballe & Sons; £20,000 Competitor Consultancy Firm

Q14 Between which two quarters was there the same percentage change in turnover for both Syballe Sons and the Competitor Consultancy Firm?

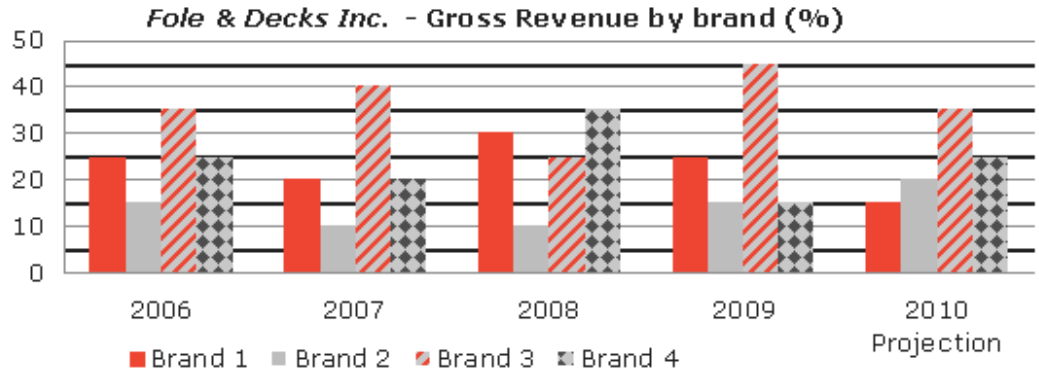
Quarter 1 – Quarter 2
Quarter 2 – Quarter 3
Quarter 3 – Quarter 4
Quarter 4 – Next Quarter
Cannot Say

Q15 The quarter immediately following the period shown will see Syballe Sons' cost and turnover both increase by the same absolute amounts as between Quarter 4 and Next Quarter. What will be the difference between their turnover and costs in that following quarter?

No difference £1,500 £1,000 £500 £2,000

Q16 If Gross Profit is Turnover minus Costs, what was the absolute difference in the Gross Profit between Syballe Sons and the Competitor Consultancy Firm for Quarters 1-4 inclusive?

Can't Tell £110,000 £147,000 £47,000 £11,000



	Total Gross Revenue * (£million)	Pre-Tax Profit (£million)	Earnings per share (pence)
2006	40	8.5	85
2007	42.7	8.7	104.7
2008	44.4	9	120
2009	50	9.6	120.3
2010	48.7	10.1	119.8

*Total Gross Revenue = Gross Revenue (Brand 1 + Brand 2 + Brand 3 + Brand 4)

Q17 Which Brand's gross revenue has increased in value by the largest amount between 2006 and 2008?

Brand 1 Brand 2 Brand 3 Brand 4 Cannot Say

Q18 If Earnings per share = Pre-tax profit / Number of shares issued, how many shares were issued in 2008 compared to 2006?

2,500,000 less
2,250,000 less
25,000 more
2,500,000 more
250,000 less

Q19 For the average annual pre-tax profit (for the years 2007-2009) to equal the average annual pre-tax profit (for the years 2007-2010), what must be the new 2010 Projection?

£895,000 £910,000 £1,150,000 £8,950,000 £9,100,000

Q20 In which year was pre-tax profit less than 20% of total gross revenue?

2007 2007 2008 2009 None of these

Numerical Reasoning

Test 4

Solution Booklet

	Sales (£millions)						
	US (Jan-June)	US (July-Dec)	Annual US Sales Target	EU (Jan-June)	EU (July-Dec)	Annual EU Sales Target	Worldwide Sales (Jan-Dec)
Product A	54.5	50.5	110	90.5	91.4	180	320
Product B	61.1	59.2	120	72.2	77.8	160	300
Product C	60.5	58	120	88	92.2	180	330
Product D	76.5	74.1	150	105.3	98.2	200	380
Product E	72.7	78.2	150	89.2	94.8	190	350
US annual sales tax: 24% on the first £130 million of sales, 0% thereafter. **EU annual sales tax: 22% on all sales.**							

Q1 For the five products combined there was a difference between total annual Sales and the total annual Sales Target. How did this difference compare for the US and the EU?

£27.1 million (US); £25.8 million (EU)
£638.3 million (US); £908.2 million (EU)
£4.7 million (US); £10.4 million (EU)
£271.7 million (US); £258.2 million (EU)
Can't tell

Step 1 – sum the Jan-June sales (US) and the July-Dec sales (US)
325.3 + 320 = £645.3 million

Step 2 – calculate the difference compared to the US target (£650 million)
650 – 645.3 = £4.7 million

Step 3 – sum the Jan-June (European) and the July-Dec sales (EU)
445.2 + 454.4 = £899.6 million

Step 4 – calculate the difference compared to the European target (£910 million)
910 – 899.6 = £10.4 million

Tip: in this question, it would have been possible to answer the question after working out just the US difference, but this is often not the case.

Thus the correct answer is £4.7 million (US); £10.4 million (EU)

Q2 If the annual EU sales for Products B and C both comprise online: offline sales in a ratio of 2:3 then what are the online EU sales for Products B and C combined?

£198,120,000
£19,812,000
£13,208,000
£132,080,000
None of These

Step 1 – calculate the EU sales for Products B and C
88.0 + 92.2 + 72.2 + 77.8 = 330.2 (£million)

Step 2 – use the ratio to find online sales.
online: offline = 2:3
330.2 = 2x + 3x = 5x
x = 330.2/5 = 66.04
online sales = 2x = 132.08

Tip: in practice it's quicker to just multiply 330.2 by (2/5) to obtain the ratio.

Thus the correct answer is £132,080,000

Q3 How much US and EU annual sales tax is due for Products B, C and D combined (to the nearest £million)?

£244 million £211 million £149 million £243 million £120 million

Step 1 - Calculate the US sales tax for Products B, C, D combined.

	US annual sales	US Sales tax on first £130 million only
Products B, C, D	120.3 + 118.5 + 150.6 = 389.4	130 x 0.24 = 31.2 (£million)
Total US sales tax = £31.2 million		

Step 2 - Calculate the European sales tax

	EU annual sales	EU sales tax
Products B, C, D	150 + 180.2 + 203.5 = 533.7	533.7 x 0.22 = 117.414 (£million)
Total EU sales tax = £117.414 million		

Step 3 – calculate the total sales tax
31.2 + 117.414 = 148.614

Tip: notice as long as you check the US sales are over £130 million, you don't actually have to calculate the total because there is no tax on sales over £130 million.

Thus the correct answer is £149 million

Q4 Which of the following represents the smallest amount?

Product B's change in EU sales between Jan-June and July-Dec
7% of Product D's US sales (Jan-June)
Product E's change in US sales between Jan-June and July-Dec
Average US Product A sales per month (July-Dec)
Average US Product C sales per month (Jan-June)

Calculate each figure as follows;

77.8 – 72.2 = £5.6 million
76.5 x 0.07 = £5.355 million
78.2 – 72.7 = £5.5 million
50.5 / 6 = £8.42 million
60.5 / 6 = 10.08 million

Tip: remember to quickly re-scan the question because some people will put down the LARGEST value (E) not the SMALLEST (B).

Thus the correct answer is 7% of Product D's US sales (Jan-June)

Share	Dividend paid (pence per Company Share)	Previous Day's Company Value* (£million)	Total Number of Company Shares (million)	Current Price Per Share (£)	Previous month's share price: Low (pence)	High (pence)
Relf plc	14	240	80	2.75	241	275
Studt Systems	8	171	55	3	238	352
Tombe	10	840	460	1.85	170	203
Xan Inc.	15	28	12	2.28	218	249
IWE Ltd	5	200	114	1.48	160	178

** Company Value = Price Per Share x Total Number of Company Shares*

Q5 A rights issue brings an additional 10% of Studt Systems shares to the market. If the current price per share drops by 8%, what is Studt Systems' new company value (to the nearest £million)?

£166 million £167 million £16.6 million £1,670,000 £169 million

Step 1 – Calculate the new number of company shares
55 x 110% = 60.5 million shares

Step 2 – Calculate the new price
300 x 92% = £2.76

Step 3 – Calculate the Company Value
£2.76 x 60.5 million = £166.98 million = £167 million (to the nearest million)

So the correct answer is £167 million

Q6 At current prices, if the owner of 150,000 Studt Systems shares collected the dividend then sold the shares, how many Tombe shares could they buy with the proceeds (to the nearest 10,000)?

290,000 280,000 270,000 260,000 250,000

Step 1 – Calculate the Company Share value including the dividend
150,000 x (3.00 + 0.08) = £462,000

Step 2 – Calculate the number of Tombe shares
462,000/1.85 = 249,730

So the correct answer is 250,000

Q7 Which share has changed in price by the largest amount since the previous day?

Relf plc Studt Systems Xan Inc IWE Ltd Cannot Say

Step 1 – Calculate the Previous Day's Price for each share listed as an answer option.
Previous Day's Price = Previous Day's Company Value / Total number of Company Shares.

Relf plc= 240 / 80 = £3.00
Studt Systems = 171 / 55 = £3.11
Xan Inc. = 28 / 12 = £2.33
IWE Ltd = 200 / 114 = £1.75

Step 2 – Calculate the difference with the Current price for each share, as follows;
Relf plc = 3.00 - 2.75 = 0.25
Studt Systems = 3.11 – 3.00 = 0.11
Xan Inc. = 2.33 - 2.28 = 0.05
IWE Ltd = 1.75 - 1.48 = 0.27

So the correct answer is IWE Ltd

Q8 A day trader bought 50,000 Tombe shares at last month's low, received the Tombe dividend and then sold all these shares at last month's high. What was the approximate percentage gain or loss?

25.3%profit 19.4%profit 25.3% loss 20.5%loss 20.5% profit

Step 1 – Calculate the cost to buy the shares
50,000 x £1.70 = £85,000

Step 2 – Calculate the profit from the change in share price
£2.03 x 50,000 = £101,500
£101,500 - £85,000 = £16,500

Step 3 – add the dividend
£16,500 + (0.10 x 50,000) = £21,500

Step 4 – calculate the %
21,500/85,000 = 25.3%

Tip: notice that one of the multiple choice options is the answer if you forgot to add the dividend (19.4% profit). This is called a distractor.

So the correct answer is 25.3% profit

	Number of new mobile phone packages sold *(over the previous 12 months)*			
IK-Connections Ltd	Platinum package	Gold package	Silver package	Bronze package
Central Region stores	4,540	4,854	5,083	5,425
Northern Region stores	4,725	5,005	5,382	5,846
Southern Region stores	4,584	5,123	5,759	5,428
Western Region stores	4,682	4,759	4,956	4,869
Eastern Region stores	4,884	5,256	4,982	4,592
Cost of package *(per month)*	£40	£35	£30	£25

Q9 Which regional store sold the second highest number of new mobile phone contracts for the Platinum and Gold packages combined (over the previous 12 months)?

Central Northern Southern Eastern Western

Calculate the combined Platinum and Gold packages for each of IK-Connections Ltd's regional stores:

Platinum package	Gold package	Total
4,540	4,854	9,394
4,725	5,005	9,730
4,584	5,123	9,707
4,884	5,256	10,140

So the correct answer is Northern

Q10 What is the difference in revenue between the package with the lowest number of sales and the package with the highest number of sales over the 12 month period, across all regions combined?

£151,740 £101,750 £15,400 £5,747 Cannot Say

Step 1 – find the highest selling and the lowest selling number of new mobile phone contracts by totaling sales across all 5 regional stores for each package

	Platinum package	Gold package	Silver package	Bronze package
Central	4,540	4,854	5,083	5,425
Northern	4,725	5,005	5,382	5,846
Southern	4,584	5,123	5,759	5,428
Western	4,682	4,759	4,956	4,869
Eastern	4,884	5,256	4,982	4,592
TOTAL	23,415	24,997	26,162	26,160

Step 2 – calculate the difference in sale values between the Silver and Platinum packages
Silver package = 26,162 x £30 = £784,860
Platinum package = 23,415 x £40 = £936,600
Difference = £936,600 - £784,860 = £151,740

So the correct answer is £151,740

Q11 What is the difference in average monthly sale values between the most and the least expensive packages?

£1,850 £2,745 £23,550 £27,450 £180,150

Step 1 – the table shows the most (£40 per month) and least expensive packages (£25 per month)

Step 2 – calculate the difference in monthly average monthly packages sold

	Platinum package	Bronze package
Central	4,540	5,425
Northern	4,725	5,846
Southern	4,584	5,428
Western	4,682	4,869
Eastern	4,884	4,592
ANNUAL TOTAL	23,415	26,160
MONTHLY AVERAGE	1951.25	2180
VALUE	1951.25 x £40 = £78,050	2180 x £25 = £54,500

Difference = £78,050 - £54,500 = £23,550

So the correct answer is £23,550

Q12 Assuming the only costs are those of the monthly package, what was the annual cost saving for a customer who switched from the Gold to the Bronze package?

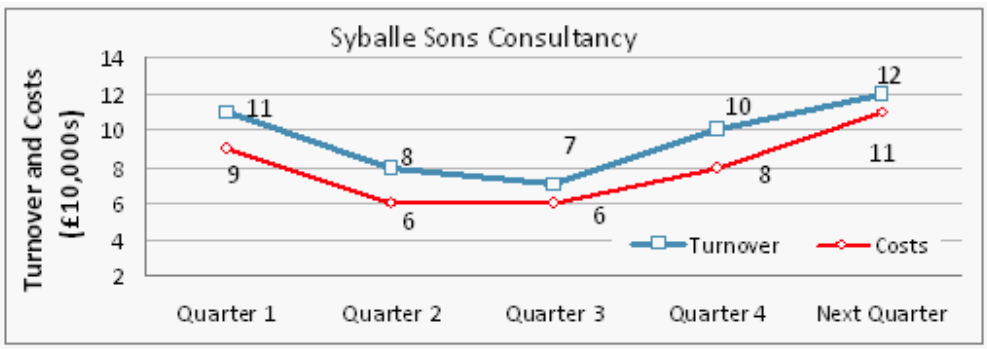
£10 £50 £75 £120 £180

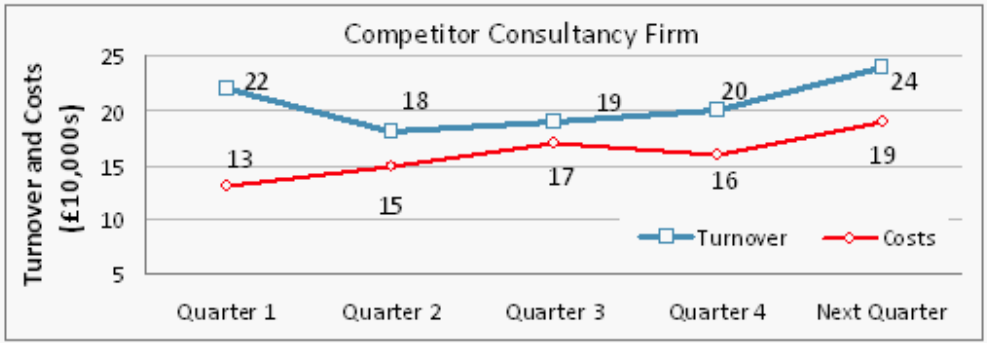
This is a relatively easy one.

Step 1 – calculate the monthly difference
£35 - £25 = £10

Step 2 – calculate the annual difference
£10 x 12 = £120

So the correct answer is £120





Q13 What is the average quarterly turnover for Syballe Sons compared to the Competitor Consultancy Firm across Quarters 1-4?

£90,000 Syballe Sons; £197,500 Competitor Consultancy Firm
£96,000 Syballe Sons; £200,000 Competitor Consultancy Firm
£90,000 Syballe Sons; £25,750 Competitor Consultancy Firm
£90,000 Syballe Sons; £19,750 Competitor Consultancy Firm
£96,000 Syballe & Sons; £20,000 Competitor Consultancy Firm

Step 1 – Calculate the average turnover for Syballe Sons
(11 + 8 + 7 + 10)/4 = £90,000

Step 1 – Calculate the average turnover for the Competitor Consultancy Firm
(22 + 18 + 19 + 20)/4 = £197,500

So the correct answer is £90,000 Syballe Sons; £197,500 Competitor Consultancy Firm

Q14 Between which two quarters was there the same percentage change in turnover for both Syballe Sons and the Competitor Consultancy Firm?

Quarter 1 – Quarter 2
Quarter 2 – Quarter 3
Quarter 3 – Quarter 4
Quarter 4 – Next Quarter
Cannot Say

Step 1 - Calculate the % change for each quarter for Syballe Sons and the Competitor Consultancy Firm

	% change for each quarter
Quarter 1 – Quarter 2	(11-8)/11 = 27.3%
Quarter 2 – Quarter 3	(8-7)/8 = 12.5%
Quarter 3 – Quarter 4	(7-10)/7 = 42.9%
Quarter 4 – Next Quarter	(10-12)/10 = 20%

Step 2 - Calculate the % increase for each quarter for the Competitor Consultancy Firm

Quarter 1 – Quarter 2	(22-18)/22 = 18.2%
Quarter 2 – Quarter 3	(18-19)/18 = 5.6%
Quarter 3 – Quarter 4	(19-20)/19 = 5.3%
Quarter 4 – Next Quarter	(24-20)/20 = 20%

Tip: in practice, the fastest way would be to enter into your calculator 8 ¸ 11 (Syballe's Q1-Q2 turnover), and see if the value on the screen changes when you enter 18 ¸ 22 (Competitor's Q1-Q2 turnover). Repeat for each quarter, and you get to Q4-Next Quarter.

Hence the correct answer is Quarter 4 – Next Quarter

Q15 The quarter immediately following the period shown will see Syballe Sons' cost and turnover both increase by the same absolute amounts as between Quarter 4 and Next Quarter. What will be the difference between their turnover and costs in that following quarter?

No difference £1,500 £1,000 £500 £2,000

In £10,000s we have:
Step 1 – Turnover increases by 2, costs increase by 3.
Step 2 – Add these to the last data shown in the graph and we have turnover of 2 + 12 = 14 and costs of 3 + 11 = 14.

So the correct answer is No difference

Q16 If Gross Profit is Turnover minus Costs, what was the absolute difference in the Gross Profit between Syballe Sons and the Competitor Consultancy Firm for Quarters 1-4 inclusive?

Can't Tell £110,000 £147,000 £47,000 £11,000

Step 1 – Calculate the Gross Profit for Syballe Sons for Quarters 1-4

(11 + 8 + 7 + 10) – (9 + 6 + 6 + 8) = 7 = £70,000

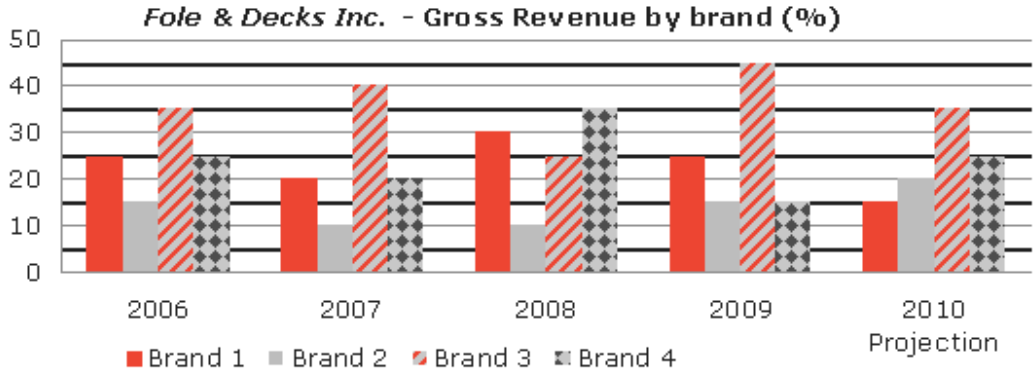
Step 2 – Calculate the Gross Profit for the Competitor Consultancy Firm

(22 + 18 + 19 + 20) – (13 + 15 + 17 + 16) = 18 = £180,000

Step 3 – calculate the difference

£70,000 - £180,000 = £110,000 less

So the correct answer is £110,000



	Total Gross Revenue * (£million)	Pre-Tax Profit (£million)	Earnings per share (pence)
2006	40	8.5	85
2007	42.7	8.7	104.7
2008	44.4	9	120
2009	50	9.6	120.3
2010	48.7	10.1	119.8

*Total Gross Revenue = Gross Revenue (Brand 1 + Brand 2 + Brand 3 + Brand 4)

Q17 Which Brand's gross revenue has increased in value by the largest amount between 2006 and 2008?

Brand 1 Brand 2 Brand 3 Brand 4 Cannot Say

Step 1 - Calculate the Gross Revenue for each Brand in 2007 and 2009. In millions we have:

	Brand 1	Brand 2	Brand 3	Brand 4
2006	40 x 25% = 10	40 x 15% = 6	40 x 35% = 14	40 x 25% = 10
2008	44.4 x 30% =13.32	44.4 x 10% = 4.44	44.4 x 25% = 11.1	44.4 x 35% = 15.54

Step 2 - Calculate the change in Gross Revenue for each Brand in 2007-2009

	Brand 1	Brand 2	Brand 3	Brand 4
2006-2008	3.32 increase	1.56 decrease	2.9 decrease	5.54 increase

So the correct answer is Brand 4

Q18 If Earnings per share = Pre-tax profit / Number of shares issued, how many shares were issued in 2008 compared to 2006?

2,500,000 less
2,250,000 less
25,000 more
2,500,000 more
250,000 less

Step 1 – calculate the Number of shares issued in 2008
Earnings per share = Pre-tax profit / Number of shares issued
1.2 = 9,000,000 / Number of shares issued
Number of shares issued = 9,000,000 / 1.2 = 7,500,000

Step 2 – calculate the Number of shares issued in 2006
0.85 = 8,500,000 / Number of shares issued
Number of shares issued = 8,500,000 / 0.85 = 10,000,000

Step 3 – Calculate the difference
7,500,000 - 10,000,000 = 2,500,000 less

Thus the correct answer is 2,500,000 less

Q19 For the average annual pre-tax profit (for the years 2007-2009) to equal the average annual pre-tax profit (for the years 2007-2010), what must be the new 2010 Projection?

£895,000 £910,000 £1,150,000 £8,950,000 £9,100,000

Step 1 – calculate the average annual Pre-tax profit between 2007-2009
(8.7 + 9.0 + 9.6)/3 = 9.1

Step 2 – create an equation where X = 2010 Projection and the average annual pre-tax profit (2007-2010) = 9.1

Step 3 – 9.1 = (X + 8.7 + 9.0 + 9.6)/4
X = (9.1 x 4) - 8.7 - 9.0 - 9.6 = 9.1 million

So the correct answer is £9,100,000

Q20 In which year was pre-tax profit less than 20% of total gross revenue?

2007 2007 2008 2009 None of these

Calculate the % of pre-tax profit for each year;

	Total Gross Revenue	Pre-Tax Profit	Pre-Tax profit/total gross revenue
2006	40	8.5	21.25%
2007	42.7	8.7	20.4%
2008	44.4	9.0	20.3%
2009	50	9.6	19.2%

So the correct answer is 2009

Numerical Reasoning

Test 5

Question Booklet

This numerical reasoning test comprises 20 questions, and you will have 17 minutes in which to correctly answer as many as you can. Calculators are permitted for this test, and it is recommended you have some rough paper to work on.

You will have to work quickly and accurately to perform well in this test. If you don't know the answer to a question, leave it and come back to it if you have time. Each question will have four possible answers, one of which is correct. You may click Back and Next during the test to review or skip questions.

You can submit your test at any time. If the time limit is up before you click submit the test will automatically be submitted with the answers you have selected. It is recommended to keep working until the time limit is up.

Try to find a time and place where you will not be interrupted during the test. When you are ready, begin the test.

	Number of Employees				
Parent Company's 5 subsidiary companies	2005	2006	2007	2008	2009
Subsidiary 1	1,538	1,584	1,573	1,585	1,614
Subsidiary 2	1,107	1,084	1,060	1,068	962
Subsidiary 3	1,340	1,384	1,393	1,398	1,412
Subsidiary 4	1,505	1,495	1,528	1,548	1,583
Subsidiary 5	1,010	980	946	997	1,029
Parent company: Employees working part-time (%)	12.0	8.1	8.0	5.4	5.0

Note: the entire workforce of the parent company comprises only the employees of its five subsidiary companies

Q1 Between which three years was there an average of 1,553 employees for one of the Subsidiary Companies?

(A) 2005-2007 Subsidiary 1
(B) 2006-2008 Subsidiary 1
(C) 2007-2009 Subsidiary 4
(D) 2007-2009 subsidiary 1
(E) None of these

Q2 In 2008 subsidiary company 4 comprised 2 regions with double the number of employees in one region compared to the other. If the ratio of male:female employees in the smaller region was 1:1.15, what was this region's number of male employees?

(A) 240
(B) 828
(C) 414
(D) 394
(E) 360

Q3 1 in 15 of the parent company's part-time employees were managers in 2005, and 1 in 13 part-time employees were managers in 2007. W hat was the difference in the number of part-time managers in 2005 compared to 2007?

(A) 14 less
(B) 12 more
(C) 12 less
(D) 13 more
(E) Cannot Say

Q4 In 2009 what was the absolute difference between the Parent Company's full-time employees and part-time employees (if Number of employees = Full-time employees + part-time employees)?

(A) 6,270
(B) 90
(C) 4,733
(D) 6,600
(E) 5,940

Laptop model	COSTS		UK Price (£)	Sale price as fraction of normal UK price
	Manufacturing cost (£)	Design cost (£)		
Adelphi	165	60	400	1/2
Adele	140	90	350	3/4
Faze	120	60	380	2/5
Stunn	145	115	420	1/2
Brete	195	130	650	2/3

Q5 For which laptop, or laptops, is the difference between the manufacturing cost and the design cost less than 20% of the manufacturing cost?

(A) Brete
(B) Stunn and Adelphi
(C) Adelphi
(D) Stunn
(E) None of these

Q6 If the same number of each model was sold last month and total sales were £220,000, how many of each model were sold?

(A) 200
(B) 2510
(C) 100
(D) 2150
(E) Cannot Say

Q7 Which of the following would generate the highest total amount at the sale prices shown?

(A) 75 Adele laptops on sale
(B) 150 Adele laptops at a further 60% reduction to the sale price
(C) 50 Faze and 50 Stunn laptops on sale
(D) 45 Brete laptops on sale
(E) 90 Stunn laptops on sale

Q8 If the sale price for a Faze laptop is $182.40 in the United States and 255.36 Euros in France, what is the sale price ratio for the UK:US:France? (Use exchange rates of 1.2 Euros to the £; and 1.5$ to the £).

(A) 152:121:212
(B) 7:6:9
(C) 5:4:7
(D) 4:5:7
(E) 152:122:213

2010 Monthly Average	Total Searchers (1000s)	Total Searches (millions)	% of Total Searchers	
			Selling goods/services	Buying goods/services
Australia	19,613	2,412	10	32
Ireland	1,146	170	3	28
UK	31,225	3,975	12	22
Italy	14,850	1,855	6	8
Sweden	16,204	9,578	21	42

Goods/services bought online (% for June 2010)	Household goods	Films/ music	Financial products	Tickets	Holidays
Australia	9	12	3	17	22
Ireland	3	9	2	10	18
UK	13	10	2	9	15
Italy	9	8	3	8	9
Sweden	5	2	1	3	4

Q9 In which country was there the second highest number of Searchers buying goods/services online?

(A) Australia
(B) Ireland
(C) UK
(D) Italy
(E) Sweden

Q10 In which country was there the second lowest number of Searchers selling goods/services online?

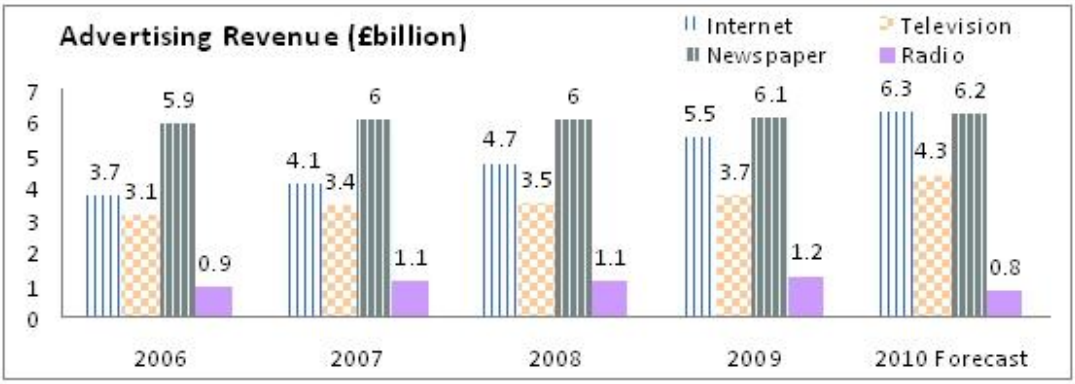
(A) Australia
(B) Ireland
(C) UK
(D) Italy
(E) Sweden

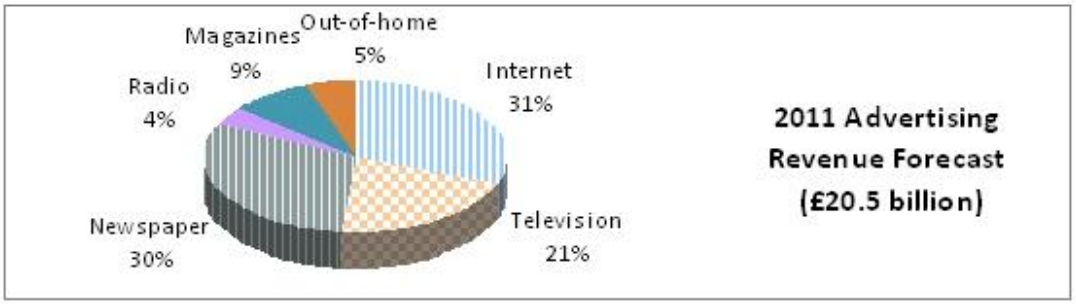
Q11 If each UK Internet Searcher spends £1.50 on average per month when buying goods/services online, what is the annual spend of all UK Internet Searchers (to the nearest £million)?

(A) £125 million
(B) £10 million
(C) £56 million
(D) £124 million
(E) £12.3 million

Q12 If three countries I.U.I. (Ireland, UK, Italy) are grouped together and the other two countries S.A. (Sweden, Australia) are grouped together, what is the difference between the average number of Internet searches per I.U.I. country and the average number of Internet searches per S.A. country?

(A) None of these
(B) 2,000 million
(C) 3,995 million
(D) 6,000 million
(E) 1,500 million





Q13 Which of the following two media are predicted together to generate £6.15 billion of advertising revenue in 2011?

(A) Television and Radio
(B) Newspaper and Radio
(C) Out-of-home and Newspaper
(D) Radio and Magazines
(E) Magazines and Television

Q14 If the Internet advertising forecast for 2011 is expected to split into mobile: display advertising in a 1:4 ratio, what is the mobile forecast?

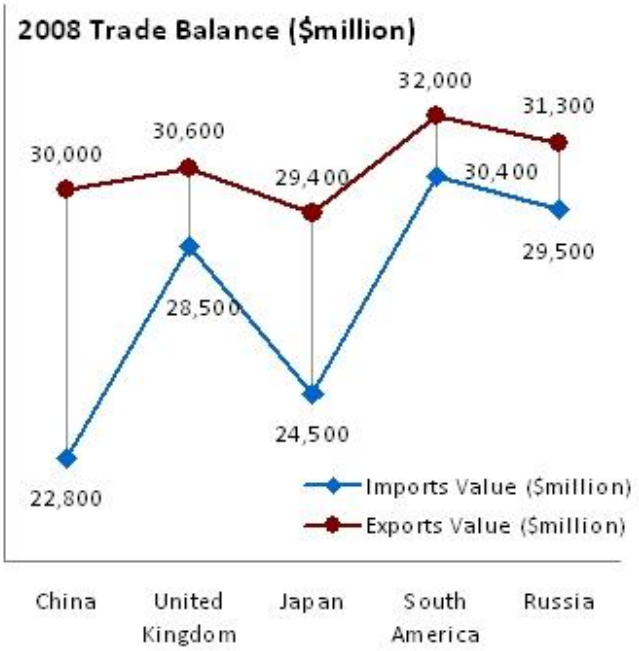
(A) £20.5 billion
(B) £1.55 billion
(C) £1.27 billion
(D) £31.00 billion
(E) £7.75 billion

Q15 If the same absolute trends in advertising revenue from 2009 to 2010 continue for 2010 to 2011, then what will be the 2011 advertising revenue for Television and Internet combined?

(A) £8.1 billion
(B) £16.2 billion
(C) £21.2 billion
(D) £12 billion
(E) £10.6 billion

Q16 If in 2009 an external market force had reduced the year's advertising revenue from Newspapers by 10% and from the Internet by 20%, then what was the total 2009 advertising revenue?

(A) None of these
(B) £9.89 billion
(C) £11.6 billion
(D) £10.44 billion
(E) £14.79 billion



2009 Trade Balance*

	Value ($ million)
China	18,400
United Kingdom	1,825
Japan	5,840
South America	1,950
Russia	1,200

* Trade balance = (Exports Value) – (Imports Value)

Q17 Of the regions shown what was the difference between the highest and the lowest trade balance in 2008?

(A) None of these
(B) $5,100 million
(C) $510 million
(D) $5,400 million
(E) $5,600 million

Q18 If Japan's exports value increased by 1/5th between 2008 to 2009 then what was Japan's imports value in 2009?

(A) Cannot Say (B) $29,400 million (C) $23,560 million (D) $25,560 million (E) $29,440 million

Q19 Compared to 2009, the UK's trade balance is expected to increase by 3.5% in 2010 and China's trading balance is expected to decrease by 4.4%. What is the difference between the 2010 trade balance forecasts for these countries (to the nearest $million)?

(A) $14,405 million
(B) $15,000 million
(C) $16,000 million
(D) $15,702 million
(E) $17,000 million

Q20 Which region or regions have experienced a decrease in their trade balance between 2008 and 2009?

(A) South America, United Kingdom
(B) United Kingdom, Russia
(C) South America, Russia
(D) South America
(E) Russia

DRAGNET

Numerical Reasoning

Test 5

Solution Booklet

	Number of Employees				
Parent Company's 5 subsidiary companies	2005	2006	2007	2008	2009
Subsidiary 1	1,538	1,584	1,573	1,585	1,614
Subsidiary 2	1,107	1,084	1,060	1,068	962
Subsidiary 3	1,340	1,384	1,393	1,398	1,412
Subsidiary 4	1,505	1,495	1,528	1,548	1,583
Subsidiary 5	1,010	980	946	997	1,029
Parent company: Employees working part-time (%)	12.0	8.1	8.0	5.4	5.0

Note: the entire workforce of the parent company comprises only the employees of its five subsidiary companies

Q1 Between which three years was there an average of 1,553 employees for one of the Subsidiary Companies?

(A) 2005-2007 Subsidiary 1
(B) 2006-2008 Subsidiary 1
(C) 2007-2009 Subsidiary 4
(D) 2007-2009 subsidiary 1
(E) None of these

Step 1 – looking at the employee totals there are only two Subsidiary Companies that could have an average of 1,553 employees across three years: Subsidiary Companies 1 and 4. The answer options include Subsidiary Companies 1 and 4, as well as (E) None of these.

Step 2; calculate the average number of employees for answer options (A) – (D)
2005-2007 Subsidiary 1 = 1,565
2006-2008 Subsidiary 1 = 1,581
2007-2009 Subsidiary 4 = 1,553
2007-2009 Subsidiary 1 = 1,591

So the correct answer is (C) 2007-2009 Subsidiary 4

Q2 In 2008 subsidiary company 4 comprised 2 regions with double the number of employees in one region compared to the other. If the ratio of male:female employees in the smaller region was 1:1.15, what was this region's number of male employees?

(A) 240
(B) 828
(C) 414
(D) 394
(E) 360

Step 1 – calculate the number of employees in the smaller region
1,548/3= 516 employees

Step 2 – apply the 1:1.15 Male:Female ratio
516/2.15 = 240 male employees

So the correct answer is (A) 240

Q3 1 in 15 of the parent company's part-time employees were managers in 2005, and 1 in 13 part-time employees were managers in 2007. What was the difference in the number of part-time managers in 2005 compared to 2007?

(A) 14 less
(B) 12 more
(C) 12 less
(D) 13 more
(E) Cannot Say

	2005	*2007*
	1,538	*1,573*
	1,107	*1,060*
	1,340	*1,393*
	1,505	*1,528*
	1,010	*946*
Step 1 – Total employees for each year =	*6,500*	*6,500*
Step 2 – Part-time employees =	*6,500 x 12% = 780*	*6,500 x 8% = 520*
Step 3 – Managers =	*780 / 15 = 52*	*520 / 13 = 40*
Step 3 – Difference = 52 – 40 = 12		

So the correct answer is (B) 12 more

Q4 In 2009 what was the absolute difference between the Parent Company's full-time employees and part-time employees (if Number of employees = Full-time employees + part-time employees)?

(A) 6,270
(B) 90
(C) 4,733
(D) 6,600
(E) 5,940

Step 1 – calculate the total employees in 2009
1,614 + 962 + 1,412 + 1,583 + 1,029 = 6,600

Step 2 – calculate the number of full-time employees
Number of employees = Full-time employees + part-time employees
6,600 = 100% = x% + 5%
Full-time employees = 95%

Step 3 – calculate the difference in the % of part-time employees to full-time employees
95% - 5% = 90%

Step 4 – calculate the difference
6,600 x 90% = 5,940

So the correct answer is (E) 5,940

Laptop model	COSTS		UK Price (£)	Sale price as fraction of normal UK price
	Manufacturing cost (£)	Design cost (£)		
Adelphi	165	60	400	1/2
Adele	140	90	350	3/4
Faze	120	60	380	2/5
Stunn	145	115	420	1/2
Brete	195	130	650	2/3

Q5 For which laptop, or laptops, is the difference between the manufacturing cost and the design cost less than 20% of the manufacturing cost?

(A) Brete
(B) Stunn and Adelphi
(C) Adelphi
(D) Stunn
(E) None of these

Calculate the % difference between the manufacturing cost and the design cost (relative to manufacturing cost) for each laptop as shown below;

Faze	*(120 - 60)/120 = 50%*
Brete	*(195 - 130)/195 = 33%*
Adele	*(140 - 90)/140 = 36%*
Stunn	*(145 - 115)/145 = 21%*
Adelphi	*(165 - 60)/165 = 64%*

So the correct answer is (E) None of these

Q6 If the same number of each model was sold last month and total sales were £220,000, how many of each model were sold?

(A) 200
(B) 2510
(C) 100
(D) 2150
(E) Cannot Say

Step 1 – Calculate the total sales value of one of each type of laptop
400 + 350 + 380 + 420 + 650 = 2200

Step 2 – Divide total monthly sales by this number
220,000/2200 = 100

Thus the correct answer is (C) 100

Q7 Which of the following would generate the highest total amount at the sale prices shown?

(A) 75 Adele laptops on sale
(B) 150 Adele laptops at a further 60% reduction to the sale price
(C) 50 Faze and 50 Stunn laptops on sale
(D) 45 Brete laptops on sale
(E) 90 Stunn laptops on sale

Step 1 – calculate the sales price for the 4 laptops that are listed as possible answer options, using the column giving sale price fraction of normal price;

	Sale Price (£)
Adele	*= 350 x 3/4 = 262.5*
Faze	*= 380 x 2/5 = 152*
Stunn	*= 420 x 1/2 = 210*
Brete	*= 650 x 2/3 = 433.33*

Step 2 – go through answer options (A) to (E) calculating the total amount

(A) 75 Adele laptops = 75 x 262.5 = £19,687.50
(B) 150 Adele laptops at a price further reduced by 60% = 40% x 150 x 262.5 = £15,750
(C) 50 Faze and 50 Stunn laptops = 50 x (152 + 210) = £18,100
(D) 45 Brete laptops = 45 x 433.33 = £19,499.85
(E) 90 Stunn laptops = 90 x 210 = £18,900.00

So the correct answer is (A) 75 Adele laptops

Q8 If the sale price for a Faze laptop is $182.40 in the United States and 255.36 Euros in France, what is the sale price ratio for UK:US:France? (Use exchange rates of 1.2 Euros to the £; and 1.5$ to the £).

(A) 152:121:212
(B) 7:6:9
(C) 5:4:7
(D) 4:5:7
(E) 152:122:213

Step 1 – use the exchange rates to calculate the sale prices in the US and in France in £.
US sale price = $182.40 /1.5 = £121.6
French sales price = 255.36 /1.2 = £212.8

Step 2 – the Faze sales price in the UK is 2/5 x £380. We now obtain a ratio
UK; US; France = 152:121.6:212.8

Step 3 – simplify the ratio by dividing by the highest common denominator (30.4)
152/30.4 : 121.6/30.4 : 212.8/30.4 = 5:4:7

So the correct answer is (C) 5:4:7

2010 Monthly Average	Total Searchers (1000s)	Total Searches (millions)	% of Total Searchers	
			Selling goods/services	Buying goods/services
Australia	19,613	2,412	10	32
Ireland	1,146	170	3	28
UK	31,225	3,975	12	22
Italy	14,850	1,855	6	8
Sweden	16,204	9,578	21	42

Goods/services bought online (% for June 2010)	Household goods	Films/ music	Financial products	Tickets	Holidays
Australia	9	12	3	17	22
Ireland	3	9	2	10	18
UK	13	10	2	9	15
Italy	9	8	3	8	9
Sweden	5	2	1	3	4

Q9 In which country was there the second highest number of Searchers buying goods/services online?

(A) Australia
(B) Ireland
(C) UK
(D) Italy
(E) Sweden

The first table shows the % of Searchers buying goods/services, as well as the number of Internet searchers. Use these columns to find the total number of searchers per country, as follows;

	(1000's)
Australia	*32% x 19,613 = 6,276.16*
Ireland	*28% x 1,146 = 320.88*
UK	*22% x 31,225 = 6,869.50*
Italy	*8% x 14,850 = 1,188*
Sweden	***42% x 16,204 = 6,805.68***

Thus the correct answer is (E) Sweden

Q10 In which country was there the second lowest number of Searchers selling goods/services online?

(A) Australia
(B) Ireland
(C) UK
(D) Italy
(E) Sweden

The first table shows the % of Searchers selling goods/services, as well as the number of Internet searchers. Use these columns to find the total number of searchers per country – whilst ensuring that - unlike the previous question – you provide the second lowest number of Searchers.

	(1000's)
Australia	*10% x 19,613 = 1,961.30*
Ireland	*3% x 1,146 = 34.38*
UK	*12% x 31,225 = 3,747.00*
Italy	***6% x 14,850 = 891.00***
Sweden	*21% x 16,204 = 3,402.84*

Thus the correct answer is (D) Italy

Q11 If each UK Internet Searcher spends £1.50 on average per month when buying goods/services online, what is the annual spend of all UK Internet Searchers (to the nearest £million)?

(A) £125 million
(B) £10 million
(C) £56 million
(D) £124 million
(E) £12.3 million

Tip: Remember to multiply the number of Searchers by the percent who actually buy goods/services. The key phrase is "when buying goods/services".

Step 1 – calculate the number of UK Internet searchers buying goods/services online in June

UK's Internet Searchers	% of searchers Buying goods/services	
31,225,000	22	31,225,000 x 22% = 6,869,500

Step 2 – calculate the annual spend
£1.50 x 6,869,500 x 12 = £123,651,000 = £124 million

So the correct answer is (D) £124 million

Q12 If three countries *I.U.I.* (Ireland, UK, Italy) are grouped together and the other two countries *S.A.* (Sweden, Australia) are grouped together, what is the difference between the average number of Internet searches per *I.U.I.* country and the average number of Internet searches per *S.A.* country?

(A) None of these
(B) 2,000 million
(C) 3,995 million
(D) 6,000 million
(E) 1,500 million

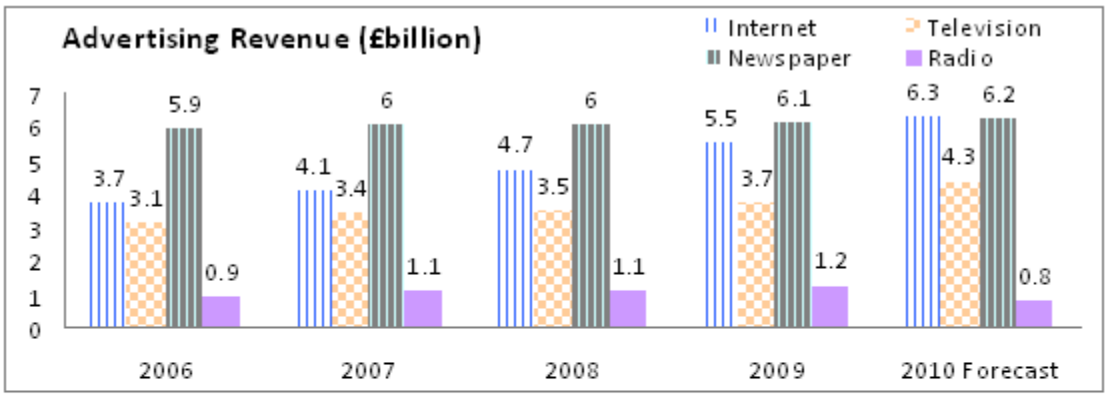
Step 1 – Calculate the I.U.I. countries number of Internet searches
170 + 3,975 + 1,855 = 6,000

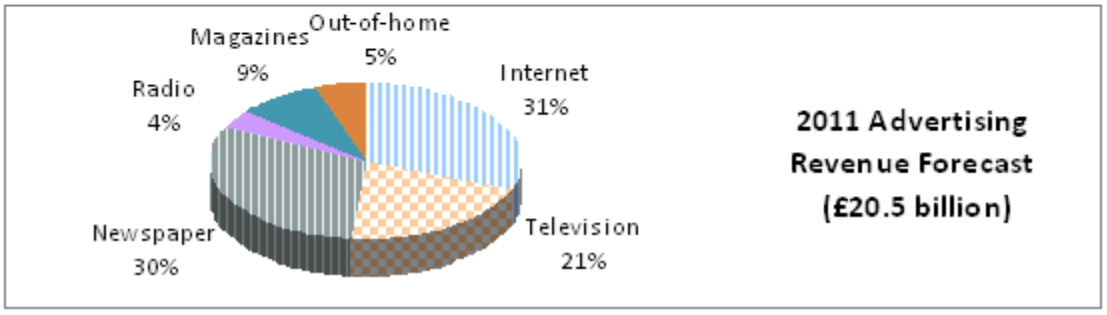
Step 2 – Calculate the number of Internet searches for the S.A. countries
2,412 + 9,578 = 11,990

Step 3 – Calculate the averages
I.U.I. = 6,000 / 3 = 2,000
S.A. = 11,990 / 2 = 5,995

Step 4 – Calculate the difference between the averages
5,995 – 2,000 = 3,995

Thus the correct answer is (C) 3,995 million





Q13 Which of the following two media are predicted together to generate £6.15 billion of advertising revenue in 2011?

(A) Television and Radio
(B) Newspaper and Radio
(C) Out-of-home and Newspaper
(D) Radio and Magazines
(E) Magazines and Television

Step 1 - Calculate the 2011 advertising revenue using the pie-chart data, look for the combinations which add up to 6.15

Television	***21% x £20.5 billion = 4.305***
Newspaper	*30% x £20.5 billion = 6.15*
Out-of-home	*5% x £20.5 billion = 1.025*
Radio	*4% x £20.5 billion = 0.82*
Magazines	***9% x £20.5 billion = 1.845***

So the correct answer is (E) Magazines and Television

Q14 If the Internet advertising forecast for 2011 is expected to split into mobile: display advertising in a 1:4 ratio, what is the mobile forecast?

(A) £20.5 billion
(B) £1.55 billion
(C) £1.27 billion
(D) £31.00 billion
(E) £7.75 billion

The information that you need is shown in the pie-chart
Step 1 – calculate the Internet advertising forecast for 2011
31% x £20.5 billion = £6.355 billion

Step 2 – apply the ratio
1:4, so mobile = 1/5th of £6.335 billion = £1.27 billion

So the correct answer is (C) £1.27 billion

Q15 If the same absolute trends in advertising revenue from 2009 to 2010 continue for 2010 to 2011, then what will be the 2011 advertising revenue for Television and Internet combined?

(A) £8.1 billion
(B) £16.2 billion
(C) £21.2 billion
(D) £12 billion
(E) £10.6 billion

Step 1 – calculate the 2009-2010 change in Television and Internet combined
Television: 4.3 – 3.7 = 0.6 increase
Internet: 6.3 – 5.5 = 0.8 increase
Television and Internet combined = 1.4 increase

Step 2 – apply the same change to the 2010 total for Television and Internet combined
6.3 + 4.3 +1.4 = 12

Thus the correct answer is (D) £12 billion

Q16 If in 2009 an external market force had reduced the year's advertising revenue from Newspapers by 10% and from the Internet by 20%, then what was the total 2009 advertising revenue?

(A) None of these

(B) £9.89 billion

(C) £11.6 billion

(D) £10.44 billion

(E) £14.79 billion

Step 1 – calculate the adjusted Newspaper revenue

6.1 x 90% = 5.49

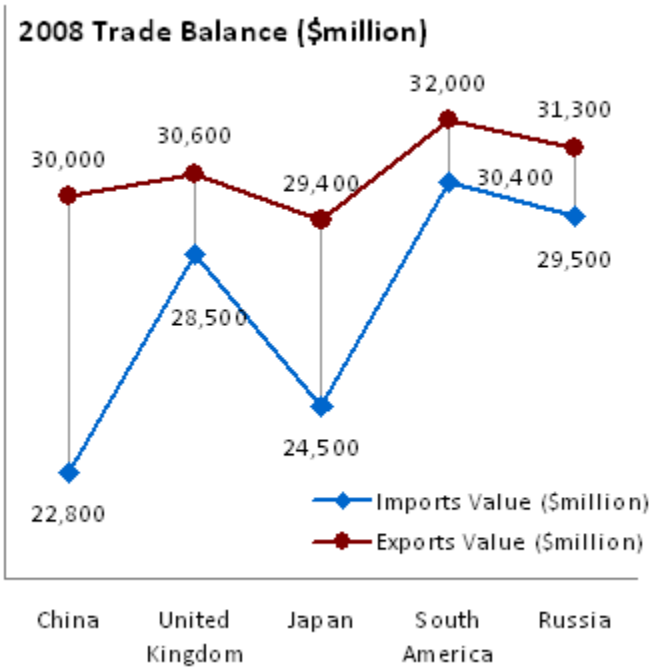
Step 2 – calculate the adjusted Internet revenue

5.5 x 80% = 4.4

Step 3 – calculate the adjusted total 2009 advertising revenue

5.49 + 4.4 + 3.7 (television) + 1.2 (radio) = 14.79

So the correct answer is (E) £14.79 billion



2009 Trade Balance*	
	Value ($ million)
China	18,400
United Kingdom	1,825
Japan	5,840
South America	1,950
Russia	1,200

* Trade balance = (Exports Value) – (Imports Value)

Q17 Of the regions shown what was the difference between the highest and the lowest trade balance in 2008?

(A) None of these
(B) $5,100 million
(C) $510 million
(D) $5,400 million
(E) $5,600 million

Step 1 - Use the graph (i.e. 2008 figures) to calculate the trading balance (exports – imports) for each region

	Exports – imports ($million)
China	*30,000 – 22,800 = 7,200*
United Kingdom	*30,600 – 28,500 = 2,100*
Japan	*29,400 – 24,500 = 4,900*
South America	*32,000 – 30,400 = 1,600*
Russia	*31,300 – 29,500 = 1,800*

Step 2 – calculate the difference between the highest and the lowest trading balance
7,200 – 1,600 = $5,600 million

So the correct answer is (E) $5,600 million

Q18 If Japan's exports value increased by 1/5th between 2008 to 2009 then what was Japan's imports value in 2009?

(A) Cannot Say
(B) $29,400 million
(C) $23,560 million
(D) $25,560 million
(E) $29,440 million

Step 1- Use the graph to obtain the 2008 exports value = 29,400

Step 2 – Add 1/5th to find the 2009 exports value
29,400 x 1.2 = 35,280

Step 3 - Use the table to obtain the 2009 trade balance = 5,840
Japan's imports value in 2009 = 35,280 – 5,840 = $29,440 million

Thus the correct answer is (E) $29,440 million

Q19 Compared to 2009, the UK's trade balance is expected to increase by 3.5% in 2010 and China's trading balance is expected to decrease by 4.4%. What is the difference between the 2010 trade balance forecasts for these countries (to the nearest $million)?

(A) $14,405 million
(B) $15,000 million
(C) $16,000 million
(D) **$15,702 million**
(E) $17,000 million

Step 1 – calculate the increase for the UK and the decrease for China
UK: 103.5% x 1,825 = 1,888.875
China: 95.6% x 18,400 = 17,590.4

Step 2 – calculate the difference
17,590.4 - 1,888.875 = $15,701.525 (million $)

Tip: *these numbers are already in million $, so don't be tempted to round the answer to (C) $16,000 million.*

So the correct answer is (D) $15,702 million

Q20 Which region or regions have experienced a decrease in their trade balance between 2008 and 2009?

(A) South America, United Kingdom
(B) United Kingdom, Russia
(C) South America, Russia
(D) South America
(E) Russia

Using the trade balance figures for 2008 from the earlier question, calculate the change in trade balances for each region between 2008 and 2009

China	*18,400 – 7,200 = 11,200 increase*
United Kingdom	***1,825 – 2,100 = 275 decrease***
Japan	*5,840 – 4,900 = 940 increase*
South America	*1,950 – 1,600 = 350 increase*
Russia	***1,200 – 1,800 = 600 decrease***

So the correct answer is (B) United Kingdom, Russia

. . . .
. . . .
. . . .
. . . .
. . . .
. . . .
. . . .