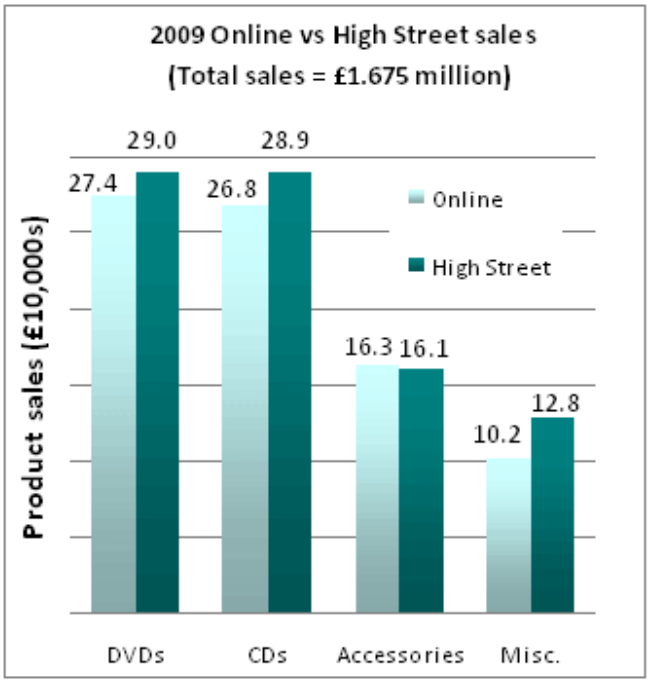
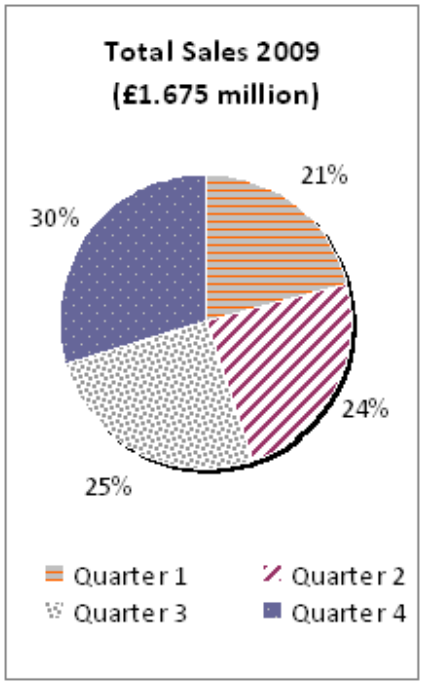
Numerical Reasoning
Practice Test 12

Solution Booklet





Q1 What are the combined sales of quarters 1 and 4?

£850,000 £852,250 **£854,250** £856,000 £858,000

The information that I need is shown in the pie-chart.
Step 1 – Calculate the total % for quarters 1 and 4
21% + 30% = 51%

Step 2 – £1.675 million x 51% = £854,250

Thus the correct answer is £854,250

Q2 If the ratio of profit to sales for online goods was 1:8, what was the total profit for online sales in 2009?

£460,850 £11,175 **£100,875** £80,750 £81,500

The information you need is shown in the graph Online vs High Street sales
Calculate total online sales = 27.4 + 26.8 + 16.3 + 10.2 = 80.7 (£10,000s)
Profit to sales ratio = 1:8, so profit = 80.7/8 = 10.0875 (£10,000s)

Thus the correct answer is £100,875

Q3 What is the difference in sales between the best and worst performing quarters?

£335,000 £83,750 £418,750 **£150,750** None of these

The most profitable and least profitable quarters are going to be those with the highest and lowest % sales respectively.

Step 1 – Calculate the difference in these %'s
30% - 21% = 9%

Step 2 – calculate the % of total sales
9% x £1.675 million = £150,750

Thus the correct answer is £150,750

Q4 What was the difference between Online and High Street sales (in £10,000s)?

6.1 6.8 2.9 6.9 2.8

Step 1 – calculate the total sales for each
High Street sales = 29 + 28.9 + 16.1 + 12.8 = 86.8
Online sales = 27.4 + 26.8 + 16.3 + 10.2 = 80.7

Step 2 – calculate the difference
Difference = 86.8 – 80.7 = 6.1. Remember these numbers are in £10,000 as stated in the graph.

So the correct answer is 6.1

Q5 In 2010 there is a High Street CD and DVDs sale that results in an increase in the annual 2009 sales of each category by 11% and 14.5% respectively. What are the combined High Street DVD and CD sales for 2010?

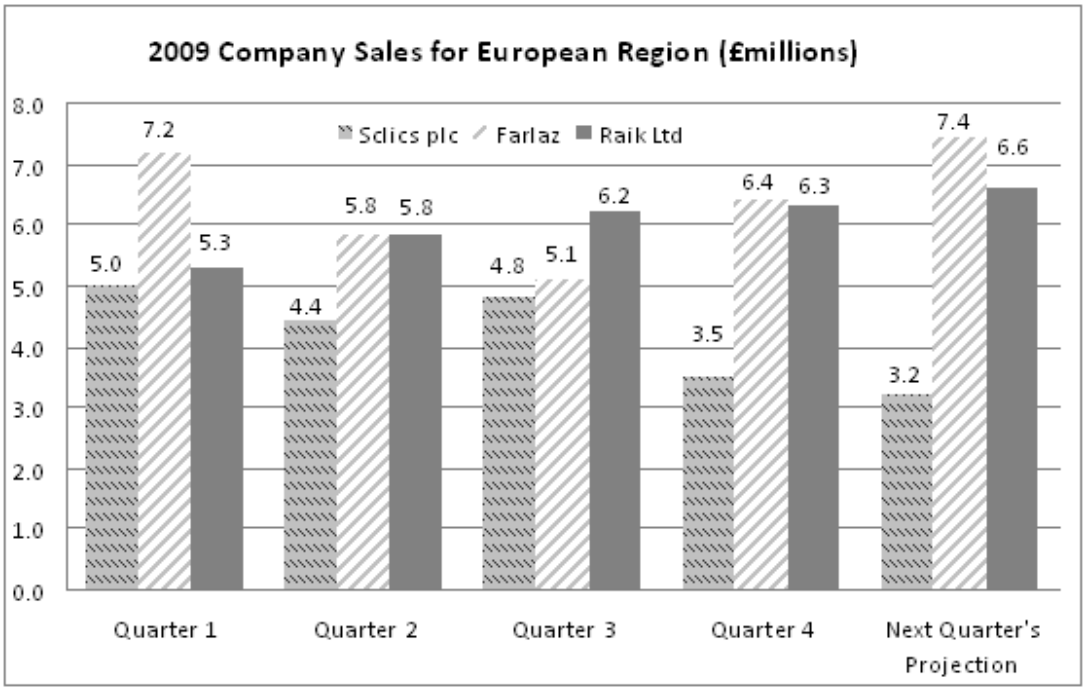
£480,500 £514,118 **£652,840** £0.56 million £65.4 million

Step 1 – calculate the % increases in each category
High Street CD (2010) = 2009 sales + 11% = 28.9 x 1.11 = 32.079
High Street DVD (2010) = 2009 sales + 14.5% = 29 x 1.145 = 33.205

Step 2 – calculate the total
32.079 + 33.205 = £65.284 (10,000)

Step 3 = £652,840

Hence the correct answer is £652,840



Q6 In which quarter did Sclics plc, Farlaz and Raik Ltd each experience an increase in sales for the European Region?

Quarter 1 Quarter 2 Quarter 3 Quarter 4 **None of these**

From looking at the graph, there is no quarter in which Sclics plc, Farlaz and Raik Ltd each experience an increase. In quarter 3 Sclics plc and Raik Ltd experience increases, but Farlaz does not.

Thus the correct answer is 'None of these'

Q7 If the annual European sales for Raik Ltd represent 45% of worldwide sales, what is the level of sales worldwide?

£62.5 million **£52.4 million** £42.6 million £28.8 million £23.6 million

Step 1 – calculate the annual sales for Raik Ltd
5.3 + 5.8 + 6.2 + 6.3 = 23.6

Step 2 – calculate the worldwide sales
100 x 23.6 / 45 = £52.4 million

Thus the correct answer is £52.4 million

Q8 How much did Sclics plc's European sales in quarters 1 and 2 differ from Farlaz's European sales over the same period?

£3.6 million more
£3.6 million less
£2.2 million less
2.2 million more
None of these

Step 1 - Calculate the Q1 and Q2 differences
Q1; 5 – 7.2 = 2.2 less
Q2; 4.4 – 5.8 = 1.4 less

Step 2 – calculate the total difference 2.2+ 1.4 = £3.6 million

So the correct answer is £3.6 million less

Q9 If the annual sales target for Raik Ltd was £29.5 million, by what fraction of this target did the company underperform?

2/3 **1/5** 1/3 1/2 1/4

Step 1 – refer to your own rough notes for the annual sales for Raik Ltd (from question 7) = 23.6 (£millions)

Step 2 – calculate the difference compared to the annual sales target
29.5 – 23.6 = 5.9

Step 3 – calculate the fraction
5.9 / 29.5 = 1/5

So the correct answer is 1/5

Q10 Next quarter's total sales projection represents what increase on Quarter 4's total sales for the three companies shown (to the nearest %)?

6.1% 7.2% 6.2% 10% **6%**

Step 1 – Calculate Quarter 4's total
3.5 + 6.4 + 6.3 = 16.2

Step 2 – Calculate the Projected Quarter's total
3.2 + 7.4 + 6.6 = 17.2

Step 3 – calculate the % increase
17.2 / 16.2 = 106.17%. The question asks for this to be rounded to the nearest percent.

So the correct answer is 6%

UK Operations of *Gills & Tines Ltd*	Full Year ended 31 December (£million)			
	2009	**2008**	**2007**	**2006**
Income Sources				
Net interest	325.2	309.5	319.7	313.8
Other income	64.2	51.8	52	51.7
Fair value gains	18.0	39.9	29.7	31.1
Costs				
Admin costs	277.8	231	285.9	283.5
Loan impairment costs	15.0	57.8	6.1	5.9
Profit Before Tax	**114.6**	**112.4**	**109.4**	**107.2**

Q11 What was the average annual income across the four years shown (to the nearest million)?

£408 million
£407 million
£402 million
£403 million
£404 million

Step 1 – Calculate the annual income for each year

	2009	***2008***	***2007***	***2006***
Income				
Net interest	*325.2*	*309.5*	*319.7*	*313.8*
Other income	*64.2*	*51.8*	*52*	*51.7*
Fair value gains	*18*	*39.9*	*29.7*	*31.1*
TOTALS	*407.4*	*401.2*	*401.4*	*396.6*

Step 2 - Calculate the average by dividing the overall total for all 4 years by 4
(407.4 + 401.2 + 401.4 + 396.6)/4 = 401.65

Step 3 - To the nearest million = £402 million

So the correct answer is £402 million

Q12 Gills & Tines Ltd's target has been to increase Profit Before Tax by more than 2% each year. In which year, or years, has this been achieved?

2008
2007, 2008
2007
2007, 2008, 2009
None of the years shown

Step 1 – calculate the % change in Profit Before Tax as shown in bold below;

2009	*2008*	*2007*
114.6	*112.4*	*109.4*
100% x (114.6 – 112.4)/112.4	***100% x (112.4 – 109.4)/109.4***	***100% x (109.4 – 107.2)/107.2***
= 1.96%	***= 2.74%***	***= 2.05%***

Thus the correct answer is 2007, 2008

Q13 Admin costs are projected to increase by a quarter in 2010 and Net Interest to increase by 2.5%, whilst all other costs and incomes are projected to remain constant. What is the projected Profit Before Tax for 2010 (in £million)?

£53.28 million
£69.45 million
£113.2 million
£144.6 million
£118.9 million

Step 1 – calculate the increase in Admin costs
277.8 x .25 = 69.45

Step 2 – calculate the increase in Net Interest
325.2 x 2.5%/100 = 8.13

Step 3 – calculate the new Profit Before Tax using the 2009 Profit Before Tax as the starting point
114.6 - 69.45 + 8.13 = 53.28

So the correct answer is £53.28 million

Q14 In which year did the combined Admin Costs and Loan Impairment Costs decrease in value?

2006 2007 **2008** 2009 Cannot Say

The total Admin Costs and Loan Impairment Costs are as follows;

	2009	***2008***	***2007***	***2006***
Admin costs	*277.8*	*231*	*285.9*	*283.5*
Loan impairment costs	*15*	*57.8*	*6.1*	*5.9*
TOTALS	***292.8***	***288.8***	***292***	***289.4***

Thus the correct answer is 2008

Q15 If corporation tax of 21% was applied each year to the *Profit Before Tax,* what was the average net profit across 2006-2009?

£110.9 million
£114.6 million
£115.6 million
£86.4 million
£87.6 million

Step 1 – Calculate the average Profit Before Tax across 2006-2009
(114.6 + 112.4 + 109.4 +107.2)/4 = 110.9

Step 2 – Deduct the 21% tax
110.9 x 79%/100 = £87.6 million

So the correct answer is £87.6 million

	Hours spent (March)				
	Team A	*Team B*	*Team C*	*Team D*	*Team E*
Admin tasks	33	42	25	19	21
Client work	402	370	419	434	404
Training	3	6	3	4	5
Meetings	40	72	32	18	56

Q16 What was the total number of days spent on Client work in March using the formula 1 day = 7 working hours (to the nearest whole day)?

300 days **290 days** 280 days 270 days 260 days

Step 1 – calculate the total hours spent
402 + 370 + 419 + 434 + 404 = 2029

Step 1 – calculate the total days spent
2029 / 7 = 289.9 days

Thus the correct answer is 290 days

Q17 If there were 3 members within Team B, what was the average number of hours spent on non-client work during March?

37hours 38 hours 39 hours **40 hours** 41 hours

Step 1 – calculate the number of non-client hours
42 + 6 + 72 = 120

Step 2 – divide by the 3 team members
120 / 3 = 40 hours

Thus the correct answer is 40 hours

Q18 If Teams A-C bill clients at £75 per hour and less experienced Teams D and E bill clients at £55 per hour, what is the total client income for March (to the nearest £1,000)?

£127,000 £129,000 £131,000 £133,000 **£135,000**

Step 1 – Calculate the client bill for Teams A-C
£75 x (402 + 370 +419) = £89,325

Step 2 – Calculate the client bill for Teams D and E
£55 x (434 + 404) = £46,090

Step 3 – Calculate the total client bill
£89,325 + £46,090 = £135,000 (to the nearest £1,000)

So the correct answer is £135,000

Q19 If the monthly summary shown is representative of the time typically spent each month over the course of a year (1 year = 12 months) then how many days (1 day = 8 working hours) do Teams A-E spend in meetings over the course of a year?

327 days 357 days 347 days 337 days 367 days

Step 1 – calculate the total time spent in meetings in March
40 + 72 + 32 + 18 + 56 = 218 hours

Step 2 – calculate the time per year
218 x 12 = 2616 hours

Step 3 – put this figure into days
2616 / 8 = 327 days

So the correct answer is 327 days

Q20 Put the teams in increasing order of total hours worked in March (starting with the lowest number of total hours worked).

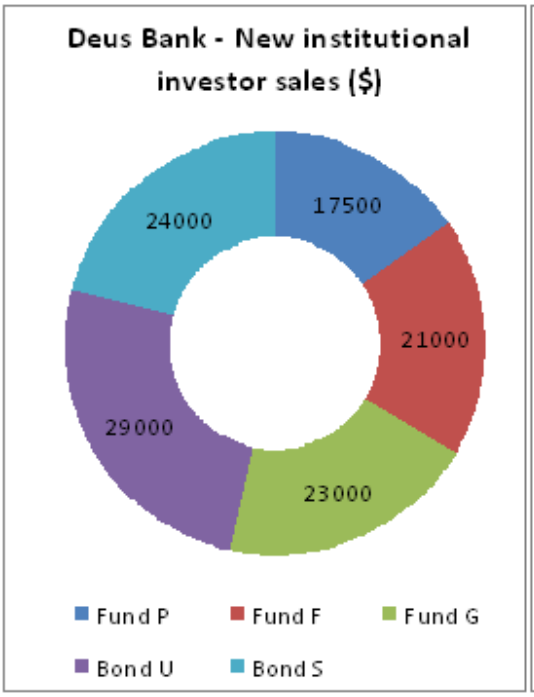
D, A, C, B, E
C, B, A, E, D
D, A, C, E, B
A, D, E, C, B
A, D, C, E, B

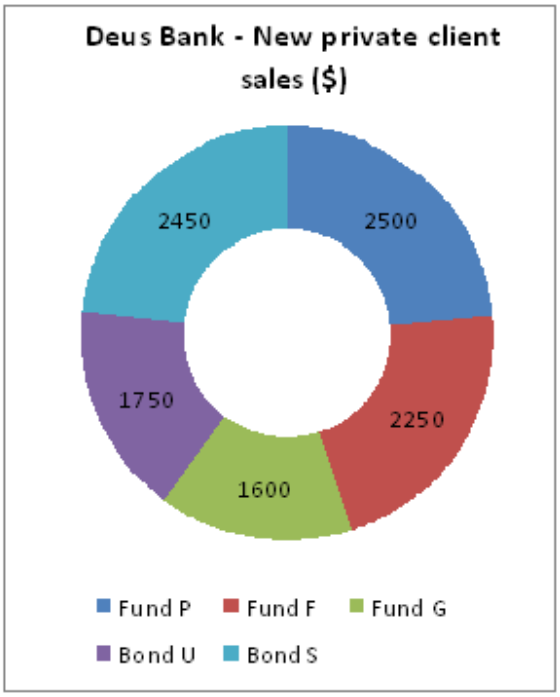
Calculate the total hours worked;

Team A	*Team B*	*Team C*	*Team D*	*Team E*
478	*490*	*479*	*475*	*486*

Put teams into order of increasing numbers of hours worked.

Thus the correct answer is D, A, C, E, B





Q21 How much did Deus Bank income from new institutional investors differ from that of new private clients?

$85,250 $106,950 $109,500 **$103,950** $114,500

Calculate the totals
114,500 – 10,550 = 103,950

So the correct answer is $103,950

Q22 What is the ratio of Fund P's sales to new private clients compared to new institutional investors?

1:4 1:5 1:6 **1:7** 1:6

Put the figures into a ratio
2,500 : 17,500 = 1:7

So the correct answer is 1:7

Q23 What are Deus Bank's total new private client and institutional investor Fund sales (in £s) at an exchange rate of $1.55 to the £?

£73,871 £193,827 £80,677 £177,475 **£43,774**

Tip: *make sure you don't include sales from Bonds; the question asks for Fund sales only.*

Step 1 – Total the Fund sales for new institutional investors and private client
(17,500 + 21,000 + 23,000) + (2,500 + 2,250 + 1,600) = $67,850

Step 2 – Apply the exchange rate of $1.55 to the £

$67,850 / 1.55 = £43,774.2

So the correct answer is £43,774

Q24 Deus Bank pays 6% and 8% commission on Bond U and Bond S sales respectively over $15,000. How much commission is paid for new Bond U and Bond S sales (across both private clients and institutional investors)?

$1,750 $2,505 $1,560 $2,103 **$1,861**

Step 1 – calculate the total Bond U and Bond S sales
Bond U = 30,750
Bond S = 26,450

Step 2 – deduct $15,000 from each
Bond U = 30,750 – 15,000 = $15,750
Bond S = 26,450 – 15,000 = $11,450

Step 3 – Calculate commissions
$15,750 x 6% =$945
$11,450 x 8% = $916
Total commission = $1,861

Hence the correct answer is $1,861

Q25 What % of total new private client and new institutional investor sales do Bond U sales represent (to the nearest %)?

21% 22% 23% 24% **25%**

Calculate the % of Bond U sales compared to total Bond U sales, as shown below;

	New institutional investor sales	*Private client sales*	*Total*	*% of total (125050)*
Fund P	*17500*	*2500*	*20000*	*16%*
Fund F	*21000*	*2250*	*23250*	*19%*
Fund G	*23000*	*1600*	*24600*	*20%*
Bond U	***29000***	***1750***	***30750***	***25%***
Bond S	*24000*	*2450*	*26450*	*21%*

Thus the correct answer is 25%

	2009 (£million)	2008 (£million)	2007 (£million)
Assets at end of financial year			
Liquid Assets	10,214	11,300	10,735.0
Loans Made	24,600	23,130	21,973.5
Derivatives	512	540	513.0
Fixed Assets	614	570	541.5
Total Assets	35,940	35,540	33,763.0
Liabilities at end of financial year			
Reserve Liabilities	111.6	124.0	132.0
Borrowings	1,389.6	1,544.0	1,650.0
Share Liabilities	1,958.0	1,628.0	1,780.0
Other Liabilities	41.8	35.0	38.0
Total Liabilities	3,501.0	3,331.0	3,600.0

Q26 What fraction were the Fixed Assets to Loans Made at the end of the financial year 2009?

1/40 1/45 1/20 1/60 1/48

The fraction = 614/24600 = 1/40

Thus the correct answer is 1/40

Q27 Which asset or assets have changed in value by more than 12% from 2007 to 2009?

Liquid Assets, Loans Made
Loans made, Fixed assets
Loans Made
Fixed Assets
Can't tell from data

Calculate the % change in asset values, as shown below. Work out the figures for only the options given, to save time.

Assets at end of financial year	*2009 (£million)*	*2007 (£million)*	*Difference*	*% change*
Liquid Assets	*10214*	*10735*	*521*	*- 4.85*
Loans Made	*24600*	*21973.5*	*2626.5*	*11.95*
Fixed Assets	***614***	***541.5***	***72.5***	***13.39***

So, the correct answer is Fixed Assets

Q28 In 2010, Loans made are projected to decrease by an eighth and both Derivatives and Fixed Assets are projected to increase by 5%. What will be the impact on the 2010 Total Assets value (in £million)?

3,075.70 increase
3,018.70 decrease
3,000.00 decrease
3,095.70 decrease
Can't tell from data

Step 1 - Calculate the changes in 2009 figures for Loans Made; and both Derivatives and Fixed Assets
Loans made; 24,600 / 8 = - 3,075
Derivatives; 512 x 5% = + 25.6
Fixed Assets; 614 x 5% = + 30.7

Step 2 - Calculate the overall impact;
3075 (Loans Made) + 25.6 (Derivatives) + 30.7 (Fixed Assets) = - 3,018.7

So the correct answer is 3,018.70 decrease

Q29 Which liability or liabilities have experienced a 10% change in value between 2008-2009?

Reserve Liabilities
Borrowings, Reserve Liabilities
Borrowings
Other Liabilities, Borrowings
Other liabilities, Share liabilities

Calculate the % change in value between 2008-2009, as follows;

	2009	*2008*	*% change*
Reserve Liabilities	*111.6*	*124*	***-10%***
Borrowings	*1389.6*	*1544*	***-10%***
Share Liabilities	*1958*	*1628*	*20%*
Other Liabilities	*41.8*	*35*	*19%*

Thus the correct answer is Borrowings, Reserve Liabilities

Q30 What is the ratio of Reserve Liabilities (2008); Reserve Liabilities (2007)

132:124 13:12 12:13 **31:33** 31:32

Put the figures into a ratio:
124:132 = 31:33

Thus the correct answer is 31:33