Numerical Reasoning

Test 10

Instructions

This practice test contains **30 questions**, and you will have **30 minutes** to answer them.

Each question will have four possible answers, one of which is correct.

Calculators are permitted for this test. It's recommended to have some rough paper for your calculations. 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.

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

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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 If worldwide sales comprise US sales, EU sales and Far Eastern sales, which products had the highest annual Far Eastern Sales?

(A) Product A
(B) Product B
(C) Product C
(D) Product D
(E) Product E

Answer:

Step 1: *Sum the half-yearly US and the EU sales to get the annual sales for each product:*

	US annual sales	EU annual sales	US annual sales + EU annual sales
Product A	105	181.9	286.9
Product B	120.3	150	270.3
Product C	118.5	180.2	298.7
Product D	150.6	203.5	354.1
Product E	150.9	184	334.9

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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.

Step 2: *Calculate Far Eastern sales for each product (= worldwide sales - US annual sales + EU annual sales)*

Product A	320 - 286.9 = 33.1
Product B	300 - 270.3 = 29.7
Product C	330 - 298.7 = 31.3
Product D	380 - 354.1 = 25.9
Product E	350 - 334.9 = 15.1

Tip: in practice, when the time is ticking, you wouldn't bother writing down the sums; you'd just enter the numbers for each product straight into your calculator and write down the Far Eastern Sales. You're also less likely to make a data-entry mistake this way.

Thus the correct answer is (A) Product A

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EU annual sales tax: 22% on all sales.

Q2 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?

(A) £27.1 million (US); £25.8 million (EU)
(B) £638.3 million (US); £908.2 million (EU)
(C) £4.7 million (US); £10.4 million (EU)
(D) £271.7 million (US); £258.2 million (EU)
(E) Can't tell

Answer:

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 (C) £4.7 million (US); £10.4 million (EU)

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

Q3 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?

(A) £198,120,000
(B) £19,812,000
(C) £13,208,000
(D) £132,080,000
(E) None of These

Answer:

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 (D) £132,080,000

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

Q4 How much US and EU annual sales tax is due for Products B, C and D combined (to the nearest £million)?

(A) £244 million
(B) £211 million
(C) £149 million
(D) £243 million
(E) £120 million

Answer:

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

	US annual sales	US Sales tax on first £130 million
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		

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

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 (C) £149 million

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

Q5   Which of the following represents the smallest amount?

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

Answer:

Step 1: *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 (B) 7% of Product D's US sales (Jan-June)

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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

The number of company shares has not changed for the past year

Q6 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)?

(A) £166 million
(B) £167 million
(C) £16.6 million
(D) £1,670,000
(E) £169 million

Answer:

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)
Thus the correct answer is (B) £167 million

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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)
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The number of company shares has not changed for the past year

Q7 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)?

(A) 290,000
(B) 280,000
(C) 270,000
(D) 260,000
(E) 250,000

Answer:

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
Thus the correct answer is (E) 250,000

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

The number of company shares has not changed for the past year

Q8 Which share has changed in price by the largest amount since the previous day?

(A) Relf plc
(B) Studt Systems
(C) Xan Inc
(D) IWE Ltd
(E) Cannot Say

Answer:

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
Thus the correct answer is (D) IWE Ltd

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

The number of company shares has not changed for the past year

Q9 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?

(A) 25.3% profit
(B) 19.4% profit
(C) 25.3% loss
(D) 20.5% loss
(E) 20.5% profit

Answer:
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.*
Thus the correct answer is (A) 25.3% profit

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

The number of company shares has not changed for the past year

Q10 A trader has £185,000 to invest and decides to invest this money equally across the 5 shares shown. How many Tombe and IWE Ltd shares does the trader purchase at current prices?

(A) 2,000 Tombe shares; 2,250 IWE Ltd shares
(B) 20,000 Tombe shares; 225 IWE Ltd shares
(C) 20,000 Tombe shares; 25,000 IWE Ltd shares
(D) 2,000 Tombe shares; 225,000 IWE Ltd shares
(E) None of these

Answer:

Step 1: *Calculate the amount invested per share*
£185,000/5 = £37,000
Step 2: *Calculate the number of Tombe shares*
37,000/1.85 =20,000
Step 3 – *Calculate the number of IWE Ltd shares*
37 000/1.48 = 25,000
Thus the correct answer is (C) 20,000 Tombe shares; 25,000 IWE Ltd shares

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IK–Connections Ltd	Number of new mobile phone packages sold (over the previous 12 months)			
	Platinum	Gold	Silver	Bronze
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
Price of package (per month)	£40	£35	£30	£25

Q11 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)?

(A) Central
(B) Northern
(C) Southern
(D) Eastern
(E) Western

Answer:

Step 1: *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
4,682	4,759	9,441
4,884	5,256	10,140

Thus the correct answer is (B) Northern

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IK–Connections Ltd	Number of new mobile phone packages sold (over the previous 12 months)			
	Platinum	Gold	Silver	Bronze
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
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Eastern Region stores	4,884	5,256	4,982	4,592
Price of package (per month)	£40	£35	£30	£25

Q12 If the price of each package was a one-off payment and not a monthly charge, what would be 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?

(A) £151,740
(B) £101,750
(C) £15,400
(D) £5,747
(E) Cannot Say

Answer:
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

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Western Region stores	4,682	4,759	4,956	4,869
Eastern Region stores	4,884	5,256	4,982	4,592
Price of package (per month)	£40	£35	£30	£25

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
Thus the correct answer is (A) £151,740

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IK-Connections Ltd	Platinum	Gold	Silver	Bronze
Number of new mobile phone packages sold (over the previous 12 months)				
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
Price of package (per month)	£40	£35	£30	£25

Q13 What is the difference in average monthly sale values between the most and the least expensive packages? Referring to the initial cost of the package only and not subsequent monthly payments.

(A) £1,850
(B) £2,745
(C) £23,550
(D) £27,450
(E) Cannot Say

Answer:

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

Thus the correct answer is (C) £23,550

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IK–Connections Ltd	Platinum	Gold	Silver	Bronze
Number of new mobile phone packages sold (over the previous 12 months)				
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
Price of package (per month)	£40	£35	£30	£25

Q14 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?

(A) £10
(B) £50
(C) £75
(D) £120
(E) £180

This is a relatively easy one.

Answer:

Step 1: *Calculate the monthly difference*
£35 - £25 = £10
Step 2: *Calculate the annual difference*
£10 x 12 = £120
Thus the correct answer is (D) £120

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

IK–Connections Ltd	Platinum	Gold	Silver	Bronze
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Eastern Region stores	4,884	5,256	4,982	4,592
Price of package (per month)	£40	£35	£30	£25

Q15 Over the next twelve months the number of Bronze package sales increases by 12.5% and 25% for the Eastern and Southern regional stores respectively, whilst other sales remain the same. What are the total Bronze package sales for the next twelve months across all IK-Connections stores?

(A) 28,091
(B) 28,951
(C) 30,091
(D) 31,951
(E) 30,020

Answer:

Step 1: *Calculate the increase for the Eastern and Southern regional stores, then add the number of packages sold for the other 3 regional stores, as shown below;*

	Original Bronze package	Increase	New Value
Central			5,425
Northern			5,846
Southern	5,428	5,428 x 125% = 6,785	6,785
Western			4,869
Eastern	4,592	4,592 x 112.5% = 5,166	5,166
Total = 28,091			

Thus the correct answer is (A) 28,091

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Syballe Sons Consultancy

Competitor Consultancy Firm
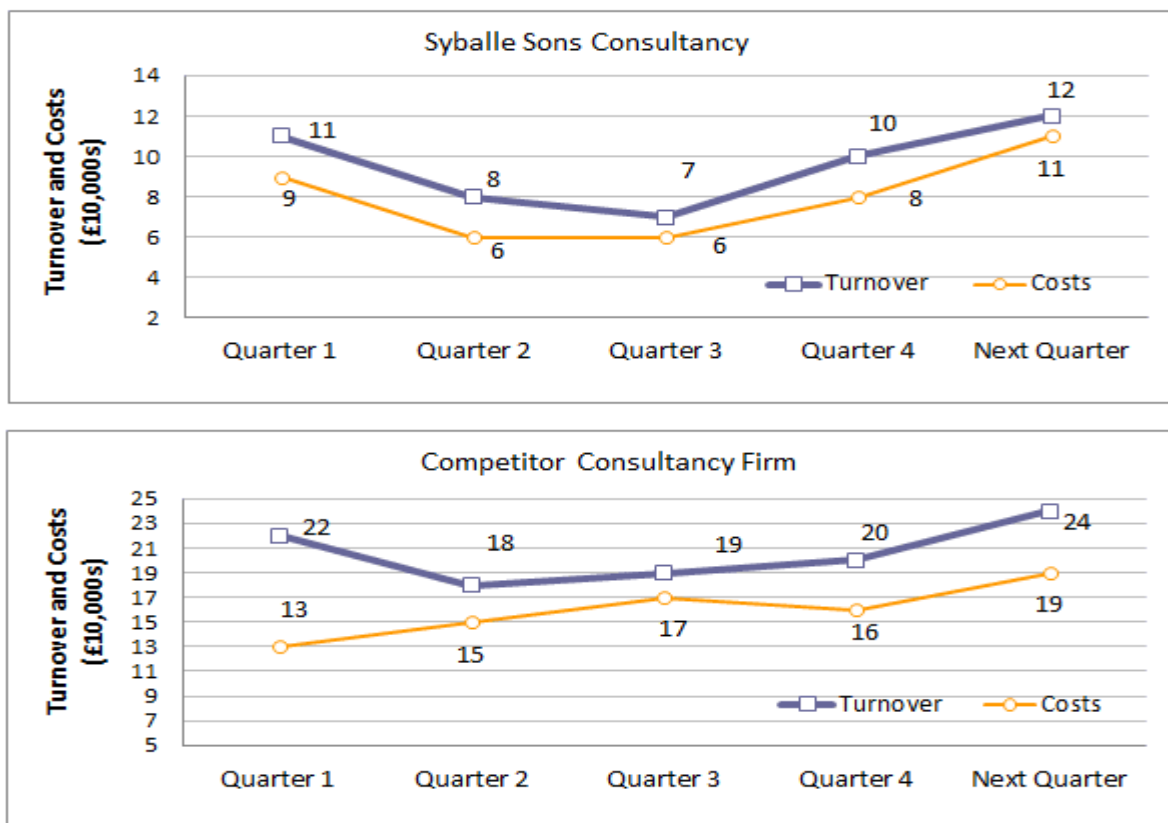
Q16 What is the average quarterly turnover for Syballe Sons compared to the Competitor Consultancy Firm across Quarters 1-4?

(A) £90,000 Syballe Sons; £197,500 Competitor Consultancy Firm
(B) £96,000 Syballe Sons; £200,000 Competitor Consultancy Firm
(C) £90,000 Syballe Sons; £25,750 Competitor Consultancy Firm
(D) £90,000 Syballe Sons; £19,750 Competitor Consultancy Firm
(E) £96,000 Syballe & Sons; £20,000 Competitor Consultancy Firm

Answer:

Step 1: *Calculate the average turnover for Syballe Sons*
(11 + 8 + 7 + 10)/4 = £90,000
Step 2: *Calculate the average turnover for the Competitor Consultancy Firm*
(22 + 18 + 19 + 20)/4 = £197,500
Thus the correct answer is (A) £90,000 Syballe Sons; £197,500 Competitor Consultancy Firm
Tip: *be careful not to include data for Next Quarter, as the question asked for just Q1-4*

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Syballe Sons Consultancy

Competitor Consultancy Firm
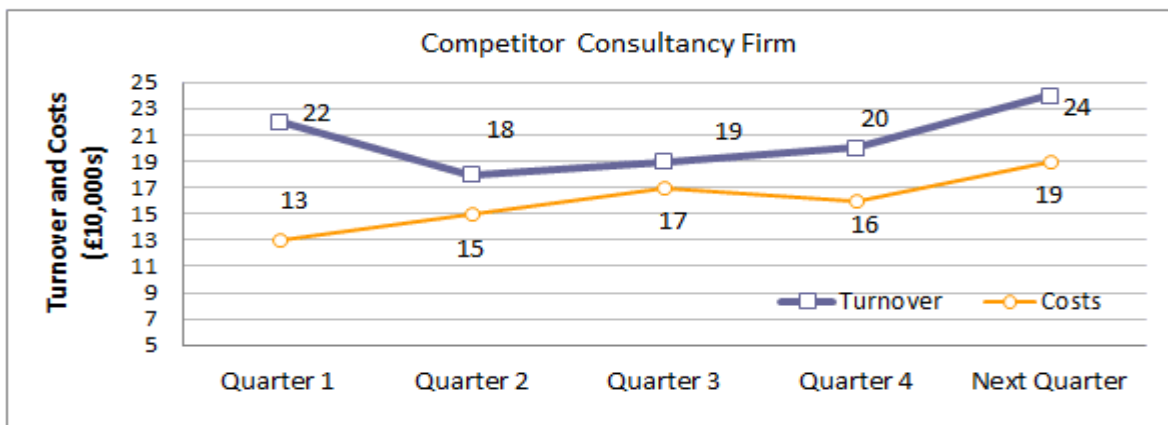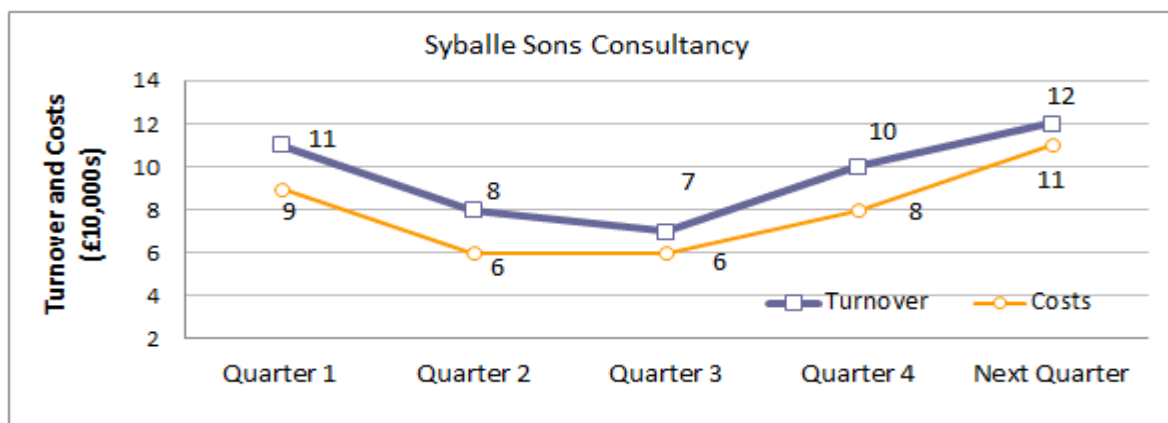
Q17 Between which two quarters was there the same percentage change in turnover for both Syballe Sons and the Competitor Consultancy Firm?

(A) Quarter 1 – Quarter 2
(B) Quarter 2 – Quarter 3
(C) Quarter 3 – Quarter 4
(D) Quarter 4 – Next Quarter
(E) Cannot Say

Answer:

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%*

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Syballe Sons Consultancy

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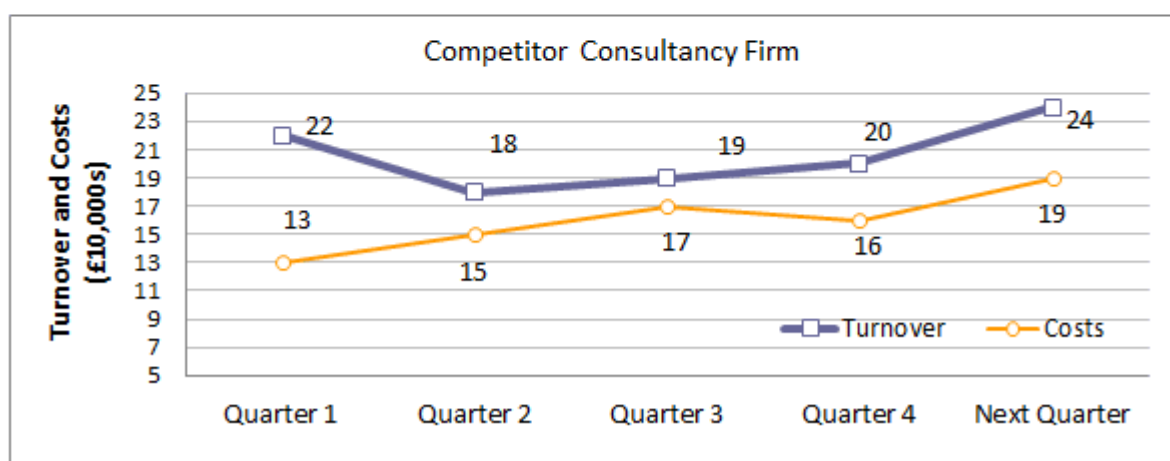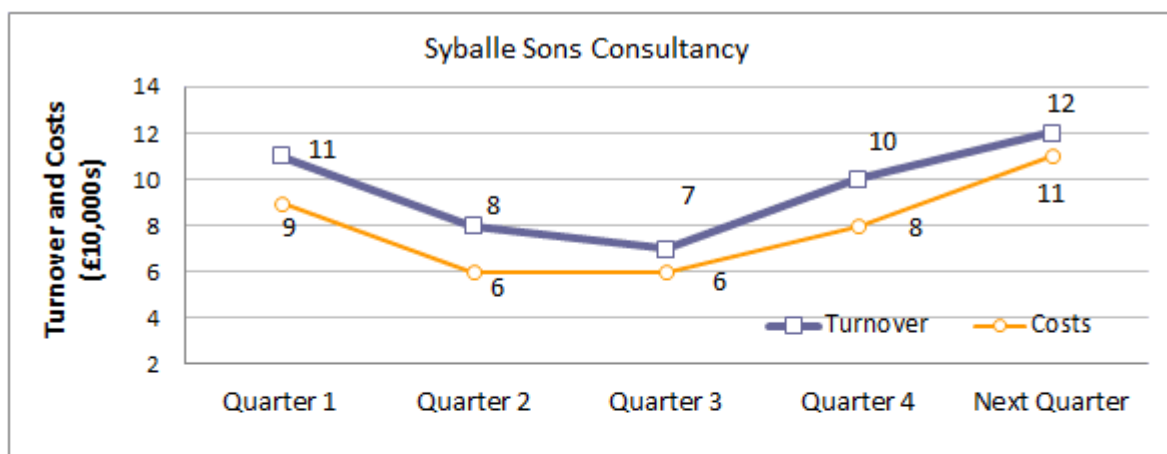
Step 2: *Calculate the % increase for each quarter for the Competitor Consultancy Firm*

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.
Thus the correct answer is (D) Quarter 4 – Next Quarter

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Syballe Sons Consultancy

Competitor Consultancy Firm
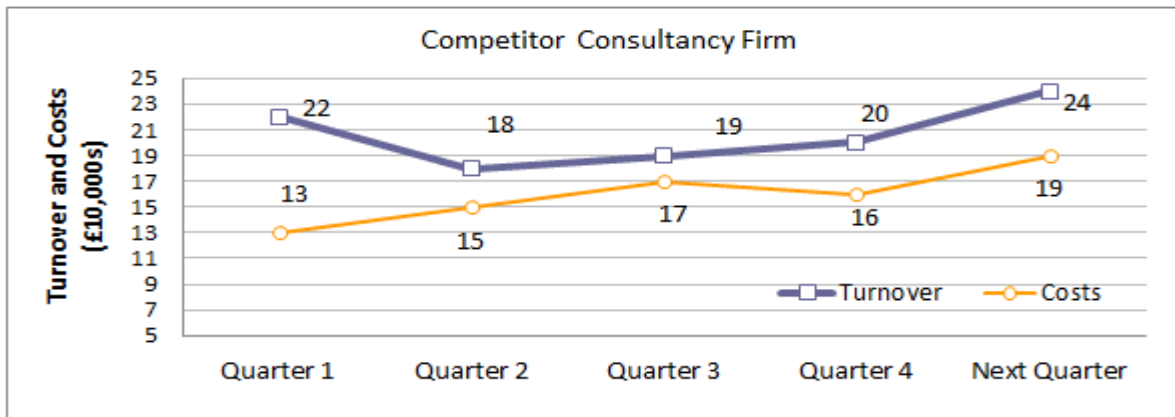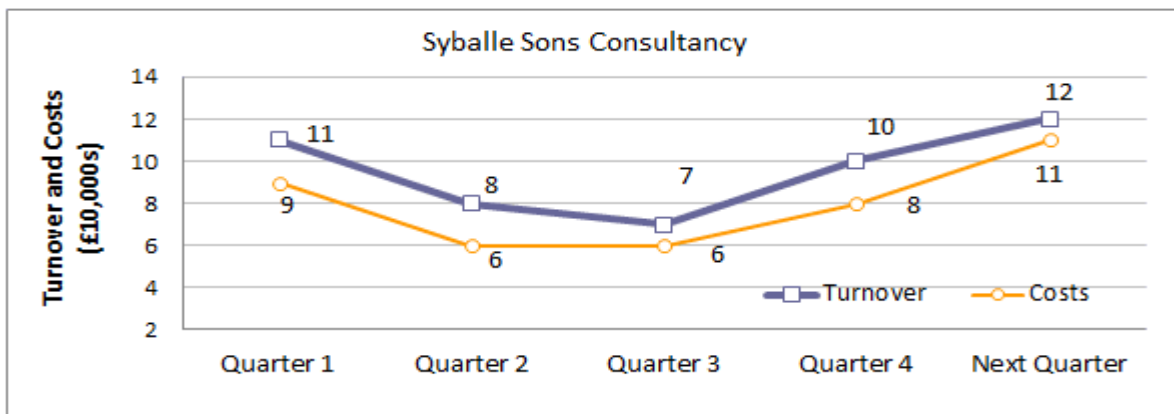
Q18 The quarter immediately following the period shown will see Syballe Sons' cost and turnover both increase by the same absolute amounts as between Quarter 4 and Next Quarter. What will be the difference between their turnover and costs in that following quarter?

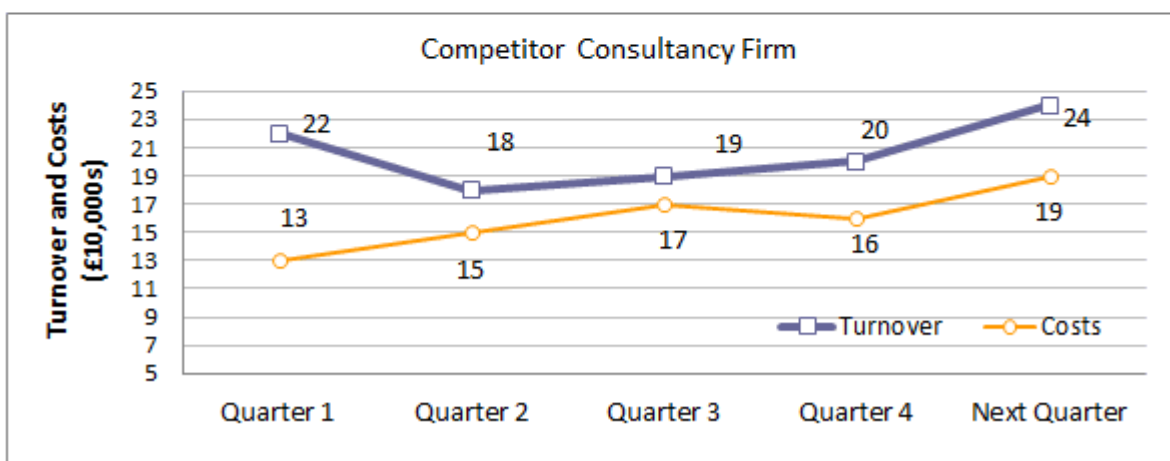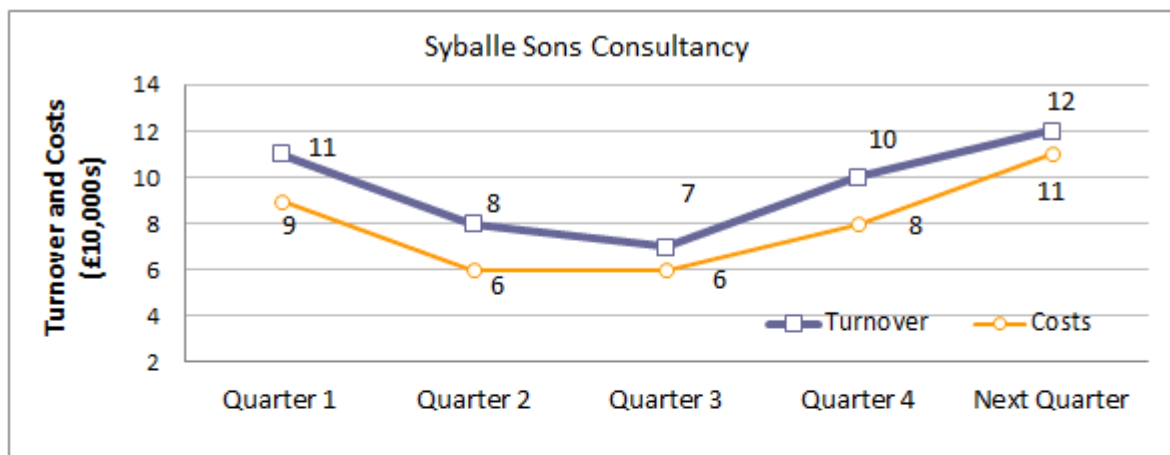(A) No difference
(B) £1,500
(C) £1,000
(D) £500
(E) £2,000

In £10,000s we have:

Answer:

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.*
Thus the correct answer is (A) No difference

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Syballe Sons Consultancy

Competitor Consultancy Firm

Q19 In the Next Quarter a new competitor enters the market and takes 1/10th of Syballe Sons' turnover, as well as 1/8th of the Competitor Consultancy's turnover. What is the turnover for this new competitor in the Next Quarter?

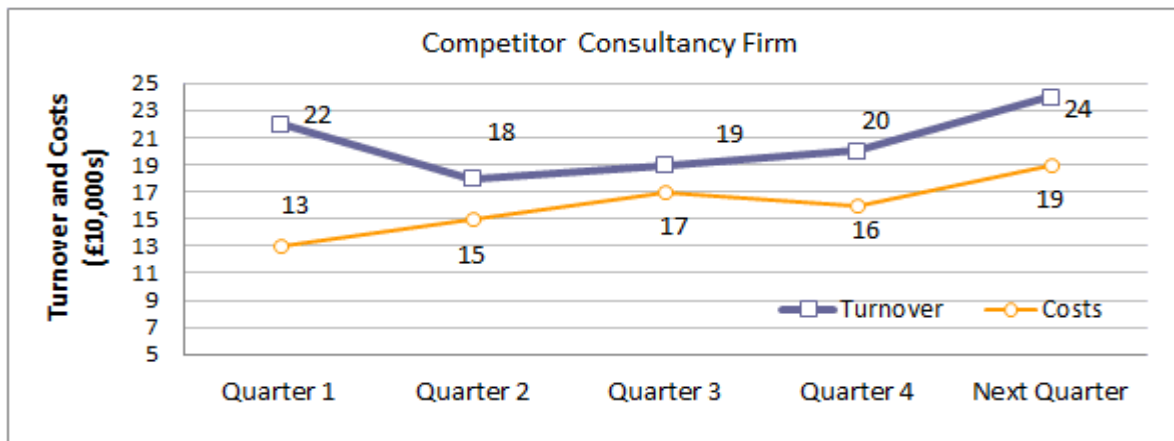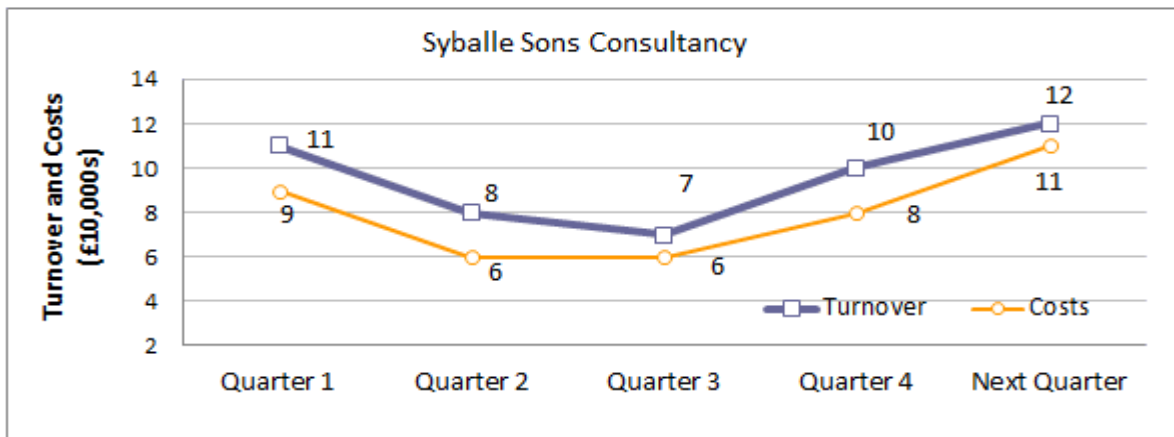(A) £14,000
(B) £16,000
(C) £42,000
(D) £168,000
(E) £179,000

Answer:

Step 1: *Add 1/10th of Syballe Sons turnover to 1/8th of their Competitor Consultancy's turnover*
(12 x 1/10th) + (24 x 1/8th) = 1.2 + 3 = 4.2
Step 2: *Convert to £10,000s*
Thus the correct answer is (C) £42,000

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Syballe Sons Consultancy

Competitor Consultancy Firm

Q20 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?

(A) Can't Tell
(B) £110,000
(C) £147,000
(D) £47,000
(E) £11,000

Answer:

Step 1: *Calculate the Gross Profit for Syballe Sons for Quarters 1-4*
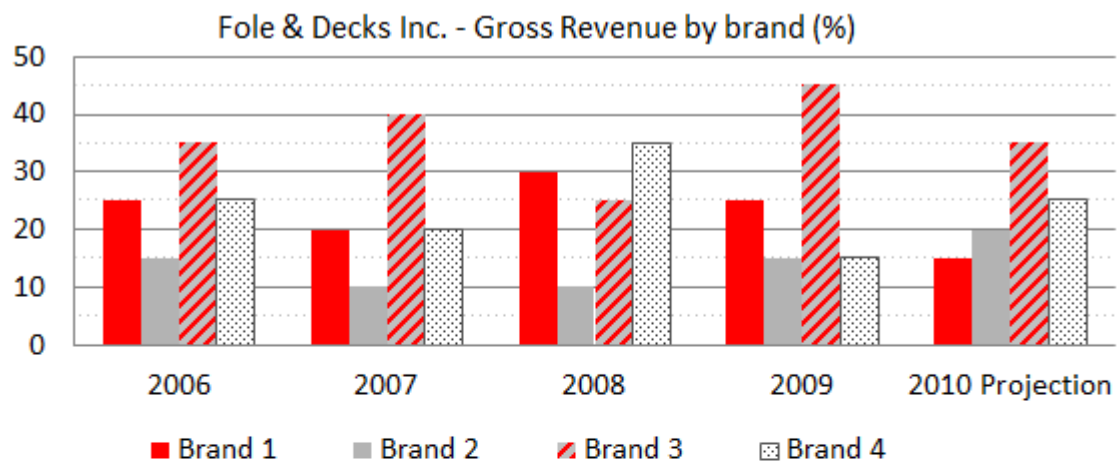*(11 + 8 + 7 + 10) – (9 + 6 + 6 + 8) = 7 = £70,000*
Step 2: *Calculate the Gross Profit for the Competitor Consultancy Firm*
(22 + 18 + 19 + 20) – (13 + 15 + 17 + 16) = 18 = £180,000
Step 3 – *Calculate the difference*
£70,000 - £180,000 = £110,000 less
Thus the correct answer is (B) £110,000

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Fole & Decks Inc. - Gross Revenue by brand (%)

Legend: ■ Brand 1 ■ Brand 2 ▨ Brand 3 ⊡ Brand 4

	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 Projection	48.7	10.1	119.8

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

Q21 What was Brand 2's gross revenue in 2008?

(A) £10,000,000
(B) £4,440,000
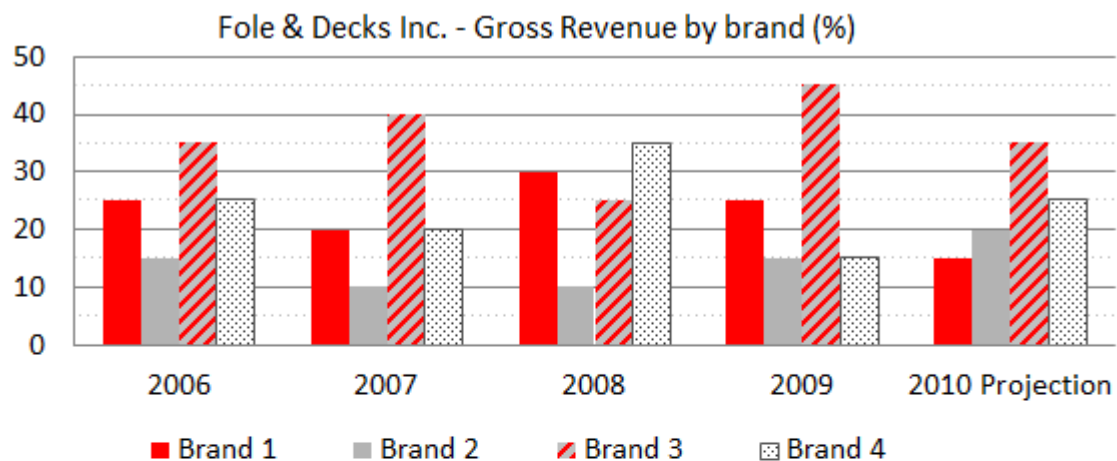(C) £44,400,000
(D) £9,100,000
(E) £100,000,000

Answer:

Step 1: *Refer to the table to obtain the Total Gross Revenue for 2008 (£44.4 million). Then refer to the graph to obtain the % of this figure that relates to Brand 2*
Step 2: *Calculate Brand 2's gross revenue in 2008*
£44.4 million x 10% = £4.44 million = £4,440,000
Thus the correct answer is (B) £4,440,000

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Fole & Decks Inc. - Gross Revenue by brand (%)

Legend: ■ Brand 1   ■ Brand 2   ▨ Brand 3   ⊡ Brand 4

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2009	50	9.6	120.3
2010 Projection	48.7	10.1	119.8

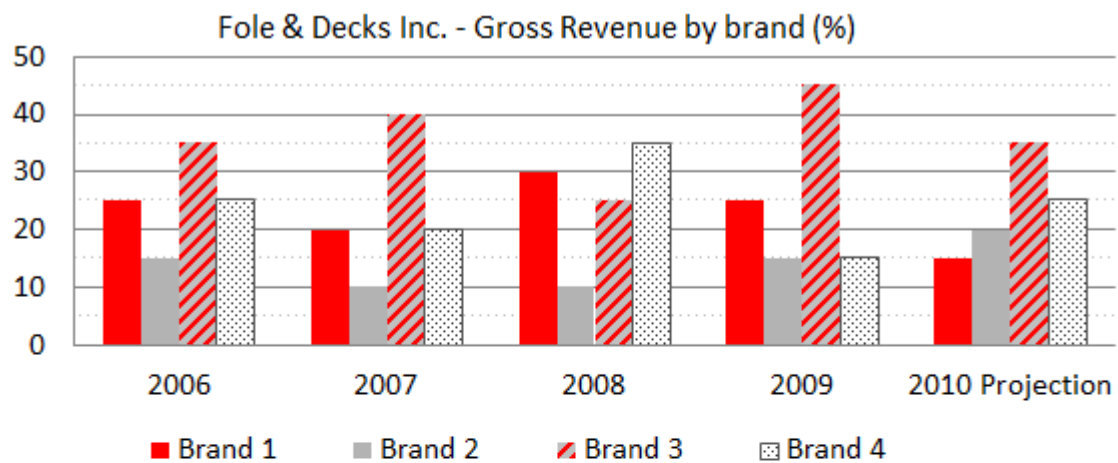*Total Gross Revenue = Gross Revenue (Brand 1 + Brand 2 + Brand 3 + Brand 4)

Q22 Which Brand's gross revenue has increased in value by the largest amount between 2006 and 2008?

(A) Brand 1
(B) Brand 2
(C) Brand 3
(D) Brand 4
(E) Cannot Say

Answer:

Step 1: *Calculate the Gross Revenue for each Brand in 2006 and 2008. 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

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Fole & Decks Inc. - Gross Revenue by brand (%)

Legend: ■ Brand 1 ■ Brand 2 ▨ Brand 3 ⊡ Brand 4

	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 Projection	48.7	10.1	119.8

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

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

Thus the correct answer is (D) Brand 4

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Fole & Decks Inc. - Gross Revenue by brand (%)

Legend: ■ Brand 1 ■ Brand 2 ▨ Brand 3 ⊞ Brand 4

	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 Projection	48.7	10.1	119.8

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

Q23 If Earnings per share = Pre-tax profit / Number of shares issued, how many shares were issued in 2008 compared to 2006?

(A) 2,500,000 less
(B) 2,250,000 less
(C) 25,000 more
(D) 2,500,000 more
(E) 250,000 less

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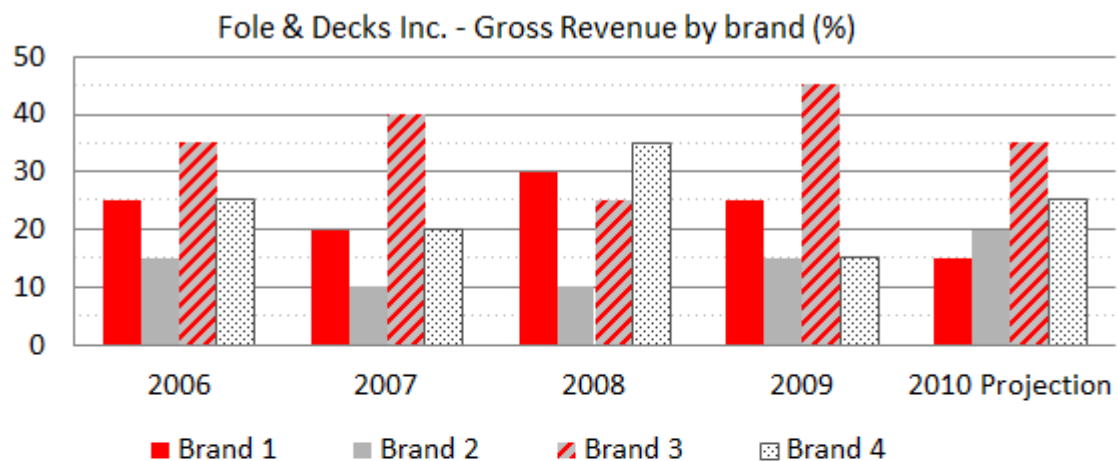
Step 1: *Calculate the Number of shares issued in 2008*
Earnings per share = Pre-tax profit / Number of shares issued
1.2 = 9,000,000 / Number of shares issued
Number of shares issued = 9,000,000 / 1.2 = 7,500,000

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Fole & Decks Inc. - Gross Revenue by brand (%)

Legend: ■ Brand 1 ■ Brand 2 ▨ Brand 3 ⊡ Brand 4

	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 Projection	48.7	10.1	119.8

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

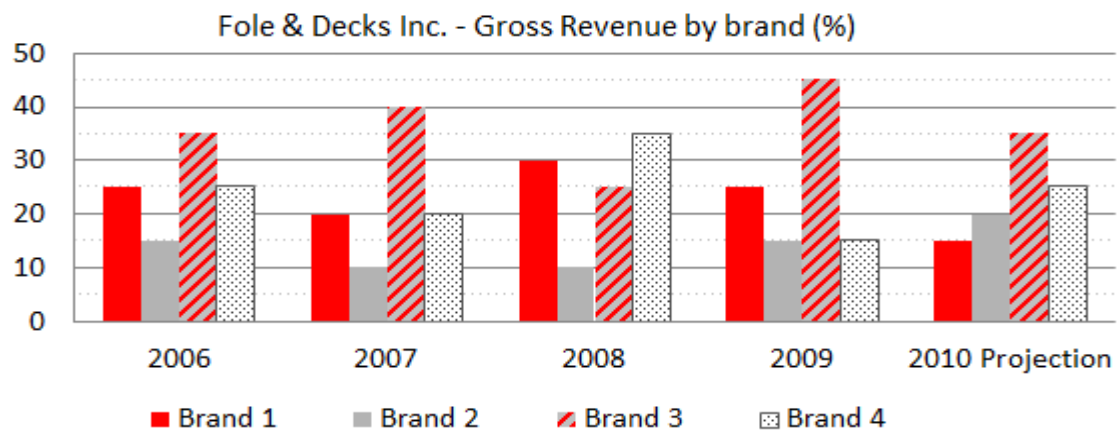**Step 2:** *Calculate the Number of shares issued in 2006*
0.85 = 8,500,000 / Number of shares issued
Number of shares issued = 8,500,000 / 0.85 = 10,000,000
Step 3 – *Calculate the difference*
7,500,000 - 10,000,000 = 2,500,000 less
Thus the correct answer is (A) 2,500,000 less

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Fole & Decks Inc. - Gross Revenue by brand (%)

Legend: Brand 1, Brand 2, Brand 3, Brand 4

	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 Projection	48.7	10.1	119.8

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

Q24 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?

(A) £895,000
(B) £910,000
(C) £1,150,000
(D) £8,950,000
(E) £9,100,000

Answer:

Step 1: *Calculate the average annual Pre-tax profit between 2007-2009*
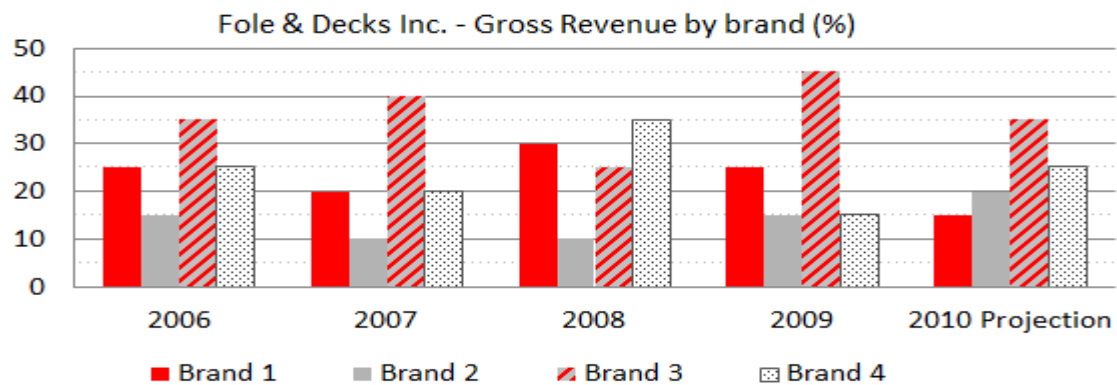*(8.7 + 9.0 + 9.6)/3 = 9.1*
Step 2: *Create an equation where X = 2010 Projection and the average annual pre-tax profit (2007-2010) = 9.1*
Step 3 *– 9.1 = (X + 8.7 + 9.0 + 9.6)/4*
X = (9.1 x 4) - 8.7 - 9.0 - 9.6 = 9.1 million
Thus the correct answer is (E) £9,100,000

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Fole & Decks Inc. - Gross Revenue by brand (%)

	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 Projection	48.7	10.1	119.8

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

Q25 In which year was pre-tax profit less than 20% of total gross revenue?

(A) 2006
(B) 2007
(C) 2008
(D) 2009
(E) None of these

Answer:

Step 1: *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%

Thus the correct answer is (D) 2009

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	Average Earnings (Euros per head of the working population)	Male Population (millions)	Female Population (millions)	Working Population (% of total population)
Netherlands	34,000	8.9	9.1	55
Germany	29,000	39.8	40.2	50
France	30,000	31.1	31.4	48
Spain	25,000	24.2	23.8	45
UK	33,000	27.9	28.1	52

Q26 What are the total earnings for the working population in Spain?

(A) 54 million Euros
(B) 540 billion Euros
(C) 540 million Euros
(D) 54 billion Euros
(E) Cannot Say

Answer:

Step 1: *Calculate the total Spanish population by adding the male and female population*
24.2 + 23.8 = 48 million
Step 2: *Calculate the total working Spanish population*
48 million x 45% = 21.6 million
Step 3 *– Calculate the total earnings for the working population in Spain*
Average Earnings (Euros per head of the population) = 25,000
25,000 x 21.6 million = 540 billion Euros
Thus the correct answer is (B) 540 billion Euros

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	Average Earnings (Euros per head of the working population)	Male Population (millions)	Female Population (millions)	Working Population (% of total population)
Netherlands	34,000	8.9	9.1	55
Germany	29,000	39.8	40.2	50
France	30,000	31.1	31.4	48
Spain	25,000	24.2	23.8	45
UK	33,000	27.9	28.1	52

Q27 If the annual birth rates for Germany and Spain are 5.4 births (per 500 population) and 6.4 births (per 500 population) respectively, what is the difference between the number of Spanish and German babies born each year?

(A) 24,960 more Spanish babies
(B) 100,000 more German babies
(C) 249,600 more German babies
(D) 1,233,000 more Spanish babies
(E) 123,300 less Spanish babies

Answer:

Step 1: *Calculate the number of German births per year*
39.8 + 40.2 = 80 million
5.4 x 80 million /500 = 864,000
Step 2: *Calculate the number of Spanish births per year*
24.2 + 23.8 = 48 million
6.4 x 48 million /500 = 614,400
Step 3 *– Calculate the difference*
864,000 - 614,400 = 249,600
Thus the correct answer is (C) 249,600 more German babies

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	Average Earnings (Euros per head of the working population)	Male Population (millions)	Female Population (millions)	Working Population (% of total population)
Netherlands	34,000	8.9	9.1	55
Germany	29,000	39.8	40.2	50
France	30,000	31.1	31.4	48
Spain	25,000	24.2	23.8	45
UK	33,000	27.9	28.1	52

Q28 Which of the following countries has a non-working population that is closest in number to the UK's non-working population?

(A) Netherlands
(B) Germany
(C) France
(D) Spain
(E) Cannot Say

Answer:

Step 1: *Calculate the populations for each country by adding the male and female population. Then calculate the non-working population for each country, including the UK, as shown below;*

	Total Population (millions)	Non Working Population (% of total population)	
Netherlands	8.9 + 9.1 = 18	100 – 55 = 45%	45% x 18 = 8.1
Germany	39.8 + 40.2 = 80	100 – 50 = 50%	50% x 80 = 40
France	31.1 + 31.4 = 62.5	100 – 48 = 52%	52% x 62.5 = 32.5
Spain	24.2 + 23.8 = 48	100 – 45 = 55%	55% x 48 = 26.4
UK	27.9 +28.1 = 56	100 – 52 = 48%	48% x 56 = 26.88

Thus the correct answer is (D) Spain

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	Average Earnings (Euros per head of the working population)	Male Population (millions)	Female Population (millions)	Working Population (% of total population)
Netherlands	34,000	8.9	9.1	55
Germany	29,000	39.8	40.2	50
France	30,000	31.1	31.4	48
Spain	25,000	24.2	23.8	45
UK	33,000	27.9	28.1	52

Q29 If the ratio of French unemployed in urban to rural areas is 7:8 and the French unemployment rate is 12% of the working population, how many French unemployed are there in urban areas?

(A) 1,050,000
(B) 1,332,000
(C) 1,680,000
(D) 2,500,000
(E) 373,200

Answer:

Step 1: *Calculate the total population*
31.1 + 31.4 = 62.5 million
Step 2: *Calculate the working population*
62.5 x 48% = 30 million
Step 3 *– Apply the unemployment rate*
30 million x 12% = 3.6 million
Step 4 *– Apply the urban to rural areas ratio*
3.6 million = 7:8
Urban areas unemployed = 3,600,000 x 7/15 = 1,680,000
Thus the correct answer is (C) 1,680,000

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	Average Earnings (Euros per head of the working population)	Male Population (millions)	Female Population (millions)	Working Population (% of total population)
Netherlands	34,000	8.9	9.1	55
Germany	29,000	39.8	40.2	50
France	30,000	31.1	31.4	48
Spain	25,000	24.2	23.8	45
UK	33,000	27.9	28.1	52

Q30 If the ratio of France:Belgium average earnings per head of working population is 2:5, then what is Belgium's average earnings in £, at an exchange rate of 1.15 Euros to the £ (to the nearest £100)?

(A) £124,000
(B) £86,000
(C) £86,300
(D) £124,800
(E) £65,200

Answer:

Step 1: *Apply the ratio*
30,000: Belgian average earnings = 2:5
Belgian average earnings = (5 x 30,000)/2 = €75,000.
Step 2: *Convert into £*
75,000 ÷ 1.15 = 65,217.4 = £65,200 (to the nearest £100)
Thus the correct answer is (E) £65,200

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End of test

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