

Numerical Reasoning

European Inflation Indices for 1998
(Released by 100 in 1st Quarter)

At this point, the chart displays the following data:

Country	Q1	Q2	Q3	Q4
Belgium	100	100	100	100
France	100	100	100	100
Germany	100	100	100	100
Italy	100	100	100	100
Spain	100	100	100	100
UK	100	100	100	100

Question 2
What average index level would result in 100 points at the end of the year?

☐ A. 100.000000
☐ B. 100.000000
☐ C. 100.000000
☐ D. 100.000000

Numerical Reasoning Free Practice Test 1

Solution Booklet

Share price	Today's Price in Euros	% Change (since yesterday)	Maximum price in Euros (last 12 months)	Minimum price in Euros (last 12 months)
Huwer Co.	1,150	1.10%	1,360	860
Drebs Ltd	18	0.50%	22	11
Fevs Plc	1,586	-9.00%	1,955	1,242
Fauvers	507	-1.00%	464	724
Steapars	2,537	1.00%	2,216	2,630

DIVIDEND PER SHARE PAYABLE (IN EUROS)	HUWER CO.	DREBS LTD	FEVS PLC	FAUVERS	STEAPARS
Interim Dividend	.83	.44	.34	.09	.48
Final Dividend	1.75	1.12	1.25	.32	.96
<i>Interim and final dividends payable, which in combination make up the total annual dividend per share.</i>					

Q1 Which share has shown the largest absolute range in price over the last year?

- (A) Huwer Co.
- (B) Drebs Ltd
- (C) Fevs Plc
- (D) Fauvers

The information that we need is shown in the table *Share price*.

The range is the difference between the maximum and the minimum prices.

Calculate the range for each share;

$$\text{Huwer Co.} = 1360 - 860 = 500$$

$$\text{Drebs Ltd} = 22 - 11 = 11$$

$$\text{Fevs Plc} = 1955 - 1242 = 713$$

$$\text{Fauvers} = 724 - 464 = 260$$

$$\text{Steapars} = 2630 - 2216 = 414$$

So the correct Answer is (C) Fevs Plc

Q2 What was yesterday's cost difference between 50 shares in Fevs plc and 100 shares in Steapars?

- (A) 164,726 Euros
- (B) 172,577 Euros
- (C) 164,045 Euros
- (D) None of these

The information that we need is shown in the table *Share price*.

Step 1

Calculate yesterday's share price for each share

Fevs plc = $1586 / 0.91 = 1742.86 \times 50 = 87,143$

Steapars = $2537 / 1.01 = 2511.88 \times 100 = 251,188$

Difference = $251,188 - 87,143 = 164,045$

So the correct Answer is (C) 164,045 Euros

Q3 Today's Drebs Ltd share price represents a 40% increase on the price one month ago. What was the price a month ago?

- (A) 25.20 Euros
- (B) 12.68 Euros
- (C) 12.90 Euros
- (D) 12.86 Euros

The information that we need is shown in the table *Share price*.

Step 1

Drebs Ltd's share price is shown as 18 Euros.

This is a 40% increase and so represents 140%.

Step 2

The price a year ago (100%) is calculated as follows;

$100 \times 18 / 140 = 12.86$

So the correct Answer is (D) 12.86 Euros

Q4 How much is the total annual dividend payable for 1,550 shares in Drebs Ltd?

- (A) Cannot say
- (B) 635 Euros
- (C) 2,232 Euros
- (D) 2,418 Euros

The information that we need is shown in the table *Dividend payable*.

Step 1 – Calculate total dividend

$$\text{Interim dividend} + \text{Final dividend} = 44 + 112 = 1.56 \text{ Euros}$$

Step 2 – Calculate total dividend for 1,550 shares

$$1550 \times 1.56 = 2,418 \text{ Euros}$$

So the correct Answer is (D) 2,418 Euros

Q5 If the exchange rate is 1.15 Euros to the £, what is today's value of 250 Drebs Ltd shares (in £s)?

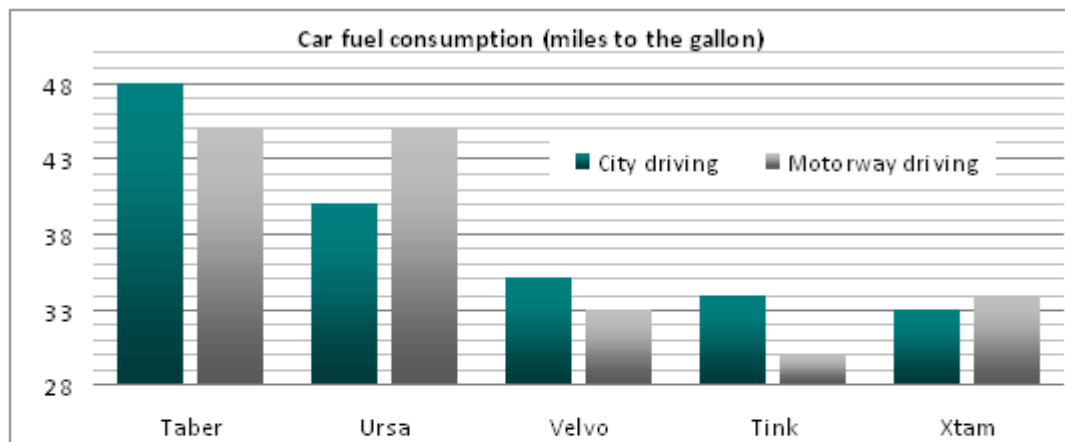
- (A) £4,500
- (B) £2,785
- (C) £3,931
- (D) £3,913

The information that we need is shown in the *Share Price* table.

$$250 \times 18 \text{ Euros} = 4500 \text{ Euros}$$

$$4500 / 1.15 = £3913$$

So the correct Answer is (D) £3,913



Car Specifics	Maximum speed (miles per hour)	Cost
Taber	65	£12,500
Ursa	60	£15,250
Velvo	125	£37,500
Tink	95	£55,250
Xtam	110	£62,500

Q6 A field sales agent plans to travel on average 4,250 miles per month driving along motorways in her Xtam car. What is her projected average annual consumption of fuel (in gallons)?

- (A) Cannot say
- (B) 1,500
- (C) 125
- (D) 150

The information that we need is shown in the graph *Car fuel economy*.

Step 1

The Xtam's fuel economy is shown as 34 miles to the gallon (motorway driving).
So, $4,250 \text{ miles} / 34 = 125 \text{ gallons per month}$.

Step 2

Annual petrol consumption = $125 \times 12 = 1500$

So the correct Answer is (B) 1,500

Q7 A car dealership has £600,000 to spend and wants to buy equal numbers of the Taber and Ursa cars. What is the largest number of each type of car that can be ordered?

- (A) 27
- (B) 48
- (C) 21
- (D) 22

The information that we need is shown in the table *Car specifics*.

Step 1 - The cost of the Taber and Ursa cars are £12,500 and £15,250 respectively.

Step 2

Since the numbers of each car purchased must be equal, calculate the combined cost as follows;

$$£12,500 + £15,250 = £27,750$$

Step 3

$$£600,000 / £27,750 = 21.6$$

So the correct Answer is (C) 21

Q8 What is the ratio of the cost of a Taber: Velvo: Xtam?

- (A) 2:4:5
- (B) 1:4:6
- (C) 1:3:5
- (D) 2:3:5

The information that we need is shown in the table *Car specifics*.

Taber: Velvo: Xtam costs = 12,500: 37,500: 62,500

So the ratios are $12,500/12,500 : 37,500/12,500 : 62,500/12,500 = 1:3:5$

So the correct Answer is (C) 1:3:5

Q9 A Tink car is taken on a test drive for 90 minutes around the city. If the average speed is 34 miles per hour how much petrol is consumed?

- (A) 1.5 gallons
- (B) 2.5 gallons
- (C) 2 gallons
- (D) 0.5 gallons

The information that we need is shown in the graph *Car fuel economy*.

Step 1 - The Tink's fuel economy (city driving) = 34 miles to the gallon.

Step 2

Speed = distance / time.

34 miles per hour = X distance / 90 mins = X distance / 1.5 hours

X distance = 34 x 1.5 = 51 miles

Step 3

Petrol consumed = 51 / 34 = 1.5 gallons

So the correct Answer is (A) 1.5 gallons

Q10 A family plans to spend a month driving around Scottish cities where the average cost of a gallon of petrol is £4.75. If the family drive 1,500 miles in their Velvo, what would be the family's total petrol costs (to the nearest £)?

- (A) £216.00
- (B) £203.57
- (C) £204.00
- (D) None of these

The information that we need is shown in the graph *Car fuel economy*.

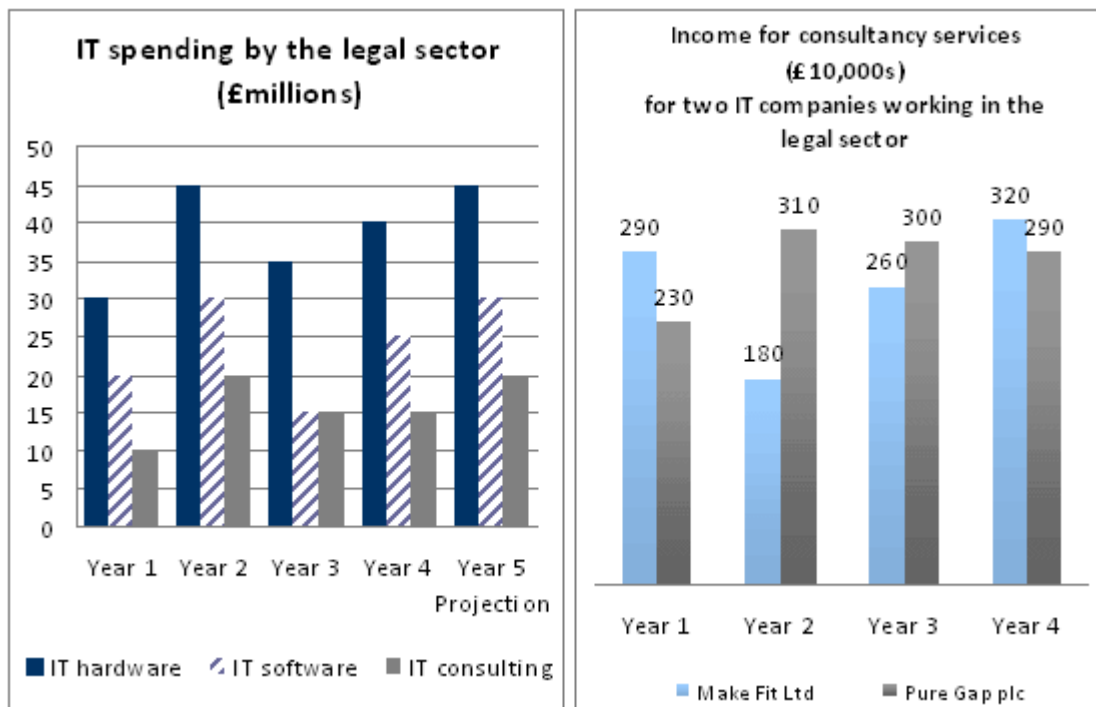
Velvo's fuel consumption (city driving) = 35 miles per gallon

1500/35 = 42.86 gallons required

Cost = 42.86 x £4.75 = £203.57

To the nearest £ = £204

So the correct Answer is (C) £204



Q11 The projection for Year 6 is the same absolute increase in spending by legal services on IT hardware, software and consulting as there was in Year 5. What is the total spending projection for IT hardware, software and consulting by legal services in Year 6?

- (A) £85 million
- (B) £95 million
- (C) £105 million
- (D) £110 million

The information that we need is shown in the graph *IT spending by the legal sector*.

Step 1 – calculate the increases in each IT spending category

IT hardware = 45 (increase of £5 million from Year 4)

IT software = 30 (increase of £5 million from Year 4)

IT consulting = 20 (increase of £5 million from Year 4)

Step 2 – calculate the total for the year after the projected year

Since there is an “even increase” the same increase of £5 million will occur in IT hardware, software and consulting.

Total = $45 + 30 + 20 + (3 \times 5) = £110$ million

So the correct Answer is (D) £110 million

Q12 How much did Make Fit Ltd's income from consultancy services for Years 1 to Year 3 inclusive differ from Pure Gap plc's income over the same period?

- (A) £110,000 less
- (B) £1,100,000 more
- (C) £110 less
- (D) £1,100,000 less

The information that we need is shown in the graph *Income for IT consultancy services*.

Total the income for each company across the three years; Year 1 to Year 3

Make Fit Ltd = $290 + 180 + 260 = 730$

Pure Gap plc = $230 + 310 + 300 = 840$

$730 - 840 = -110$ (£10,000's)

So the correct Answer is (D) £1,100,000 less

Q13 Which of the following statements is false regarding legal sector spending between Year 4 and projected Year 5.

- (A) IT consulting will increase by £5million.
- (B) IT consulting will match that of year 2.
- (C) IT software will exceed IT consulting.
- (D) Spending on IT hardware will decline.

The information that we need is shown in the graph *IT spending by the legal sector*. The question focuses on the data for Year 4 and the Projection.

Check whether each statement is true or false. The option for D is false. There are increases projected for IT hardware, for IT software and for consulting.

So the correct Answer is (D) Spending on IT hardware, software and consulting is projected to decline.

Q14 In which year(s) did Make Fit Ltd and Pure Gap plc's combined IT consultancy income exceed £6million?

- (A) Year 1 and Year 4
- (B) Year 4
- (C) Year 1 and Year 3
- (D) Year 3

The information that we need is shown in the graph *Income for IT consultancy services*.

	<i>Make Fit Ltd and Pure Gap plc's combined IT consulting income</i>
Year 1	$290 + 230$ (£10,000s) = £5.2 million
Year 2	$180 + 310$ (£10,000s) = £4.9 million
Year 3	$260 + 300$ (£10,000s) = £5.6 million
Year 4	$320 + 290$ (£10,000s) = £6.1 million

So the correct Answer is (B) Year 4

Q15 If there had been double the number of Pure Gap plc sales in Year 2, what fraction would Make Fit Ltd sales be of combined Pure Gap plc and Make Fit Ltd sales in Year 2?

- (A) $18/49$
- (B) $9/40$
- (C) $9/4$
- (D) $4/9$

The information that we need is shown in the graph *IT spending*.

Step 1 – calculate Pure Gap
Year 2 Pure Gap sales = $2 \times 310 = 620$

Step 2 – calculate total sales
Pure Gap + Make Fit sales = $620 + 180 = 800$

Step 3 – calculate the fraction Make Fit Ltd sales are of the combined Pure Gap plc and Make Fit Ltd sales
 $180/800 = 9/40$

So the correct Answer is (B)

IKE Computers – Sales Turnover (January)	Actual (£)	Target (£)
Sales Turnover	277,350	325,000
Sales Tax (16.3%)	38,829	45,500
Net Turnover	238,521	279,500
Labour Costs	166,000	175,000
Other Costs	36,000	41,000
Gross Profit	36,521	63,500

Table of January's Sales Turnover and Profit for IKE Computers in the UK.

Q16 If actual labour costs rise so as to halve their discrepancy against the target, what will be the change in Gross Profit?

- (A) Falls by £4,500
- (B) Rises by £4,500
- (C) No overall effect
- (D) Rises by £9,000

Step 1 – halve the labour costs discrepancy against target
 (target labour costs - actual labour costs)/2 = (175,000 – 166,000)/2 = £ 4,500

Step 2 – calculate effect on Profit
 If labour costs rise by £4,500, then profit falls by £4,500

Thus the correct Answer is (A) falls by £4,500

Q17 IKE Computers aim to grow monthly profits by 1.5%, starting in February. If monthly costs are kept constant what will the sales turnover need to be in February?

- (A) £242,099
- (B) £278,036
- (C) £38,555
- (D) £274,299

Step 1
 The Net Turnover will need to rise by an equivalent amount i.e. 1.5% of Gross Profit

$$36,521 \times 1.5\% = 547.8$$
$$547.8 + 238,521 = 239,068.8$$

Step 2

$$\text{Gross turnover} = 239,068.8 \times 1.163\% = \text{£}278,036$$

Thus the correct Answer is (B) £278,036

Q18 If the American operations of IKE Computers had a January sales turnover in the ratio of 4:5 (American:UK) then what was the January sales turnover for American operations in \$ (at an exchange rate of 1.6\$ to the £)?

- (A) \$557,400
- (B) \$355,008
- (C) \$216,860
- (D) \$216,680

Step 1 – Calculate the January sales turnover for American operations

$$\text{American:UK} = 4:5$$

$$\text{American} = 277,350 \times \frac{4}{5} = 221,880$$

Step 2 – Convert into \$

$$221,880 \times 1.6 = 355,008$$

Thus the correct Answer is (B) \$355,008

Q19 If IKE Computers in the UK employed eighty permanent employees in January who were on the same salary, what would be the effect on February's labour costs of replacing twenty permanent employees with interim staff on £36,000 average salaries?

- (A) Cannot tell
- (B) £20,750
- (C) £2,075
- (D) £18,500

Step 1 – calculate the monthly cost of each full-time employee in January

$$166,000 / 80 = 2,075$$

Step 2 – calculate the difference in monthly labour costs

$$\text{Interim employee} = 36,000 / 12 = 3,000$$

$$3,000 - 2,075 = 925$$

Step 3 – Calculate the difference of replacing 20 full time employees with interims

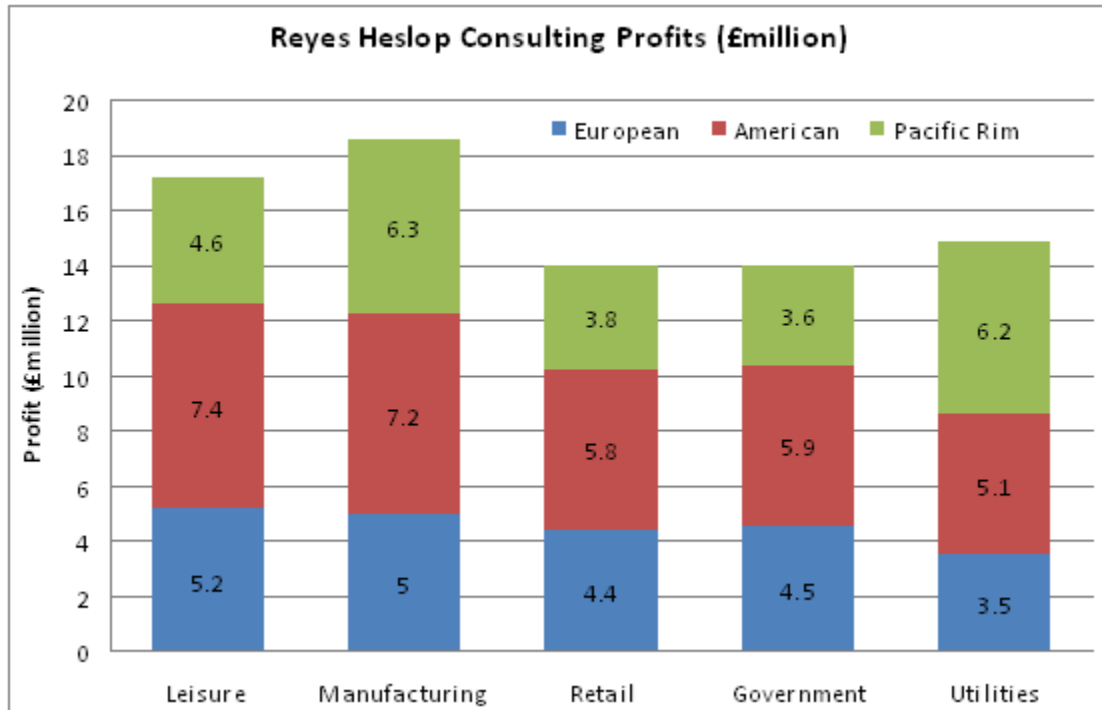
$$925 \times 20 = \text{£}18,500$$

Thus the correct Answer is (D) £18,500

Q20 If February's profit target is set as a 40% increase on January's figure, to be followed by a 25% decrease in March, what is March's profit target (in £1,000s)?

- (A) 66,675
- (B) 66.7
- (C) 6.7
- (D) 666,750

$63,500 \times 140/100 = 88,900$
 $88,900 \times 75/100 = 66,675 = 66.7$ (£1,000s)
Thus the correct Answer is (B) 66.7



Q21 Which sector represents approximately 19% of total profits?

- (A) Leisure
- (B) Manufacturing
- (C) Retail
- (D) Utilities

The series of calculations is best shown in a table, where the first calculation is the total profit for each sector across the three territories.

	Step 1 – calculate sum	Step 2 - Total	Step 3 - % of total
Leisure	$5.2 + 7.4 + 4.6 = 17.2$	17.2	22%
Manufacturing	$5 + 7.2 + 6.3 = 18.5$	18.5	24%
Retail	$4.4 + 5.8 + 3.8 = 14$	14	18%
Government	$4.5 + 5.9 + 3.6 = 14$	14	18%
Utilities	$3.5 + 5.1 + 6.2 = 14.8$	14.8	19%
		TOTAL = 78.5	

Thus the correct Answer is (D) Utilities

Q22 If the ratio of profit to turnover for Pacific Rim contracts was 2:15, what was the Government turnover in the Pacific Rim (in £100,000s)?

- (A) 36
- (B) 27
- (C) 270
- (D) 360

Contracts ratio of profit (£3.6million) to turnover = 2:15

Turnover = £3.6 million $\times 15/2$ = £27 million = 270 (in £100,000's)

Thus the correct Answer is (C) 270

Q23 Reyes Heslop plans to expand its leisure consultancy profits from the current 1/20th share of total profits to a 1/5th share of total profits. What absolute value does this Reyes Heslop expansion represent?

- (A) £2.7 million
- (B) £2.6 million
- (C) £2.5 million
- (D) £2.8 million

Step 1 – Calculate the fraction by which it expands

$(1/5 - 1/20) = (4/20 - 1/20) = 3/20$.

Step 2 – Calculate the absolute value

Reyes Heslop's leisure consulting revenue worldwide = $4.6 + 7.4 + 5.2 = £17.2$ million.

$£17.2 \text{ million} \times 3/20 = £2.58 \text{ million} = £2.6 \text{ million}$ (to 1 decimal place)

Thus the correct Answer is (B) £2.6 million

Q24 A competitor wants to takeover Reyes Heslop and offers a price of 8 times current profits. Reyes Heslop shareholders reject this offer and suggest a price that is 20% higher, what is this price?

- (A) £79 million
- (B) £628 million
- (C) £754 million
- (D) £502 million

Calculate the current profits total = £78.5 million

Price = $(£78.5 \text{ million} \times 8) + 20\% = £628 \text{ million} \times 120\% = £753.6 \text{ million}$

Thus the correct Answer is (C) £754 million

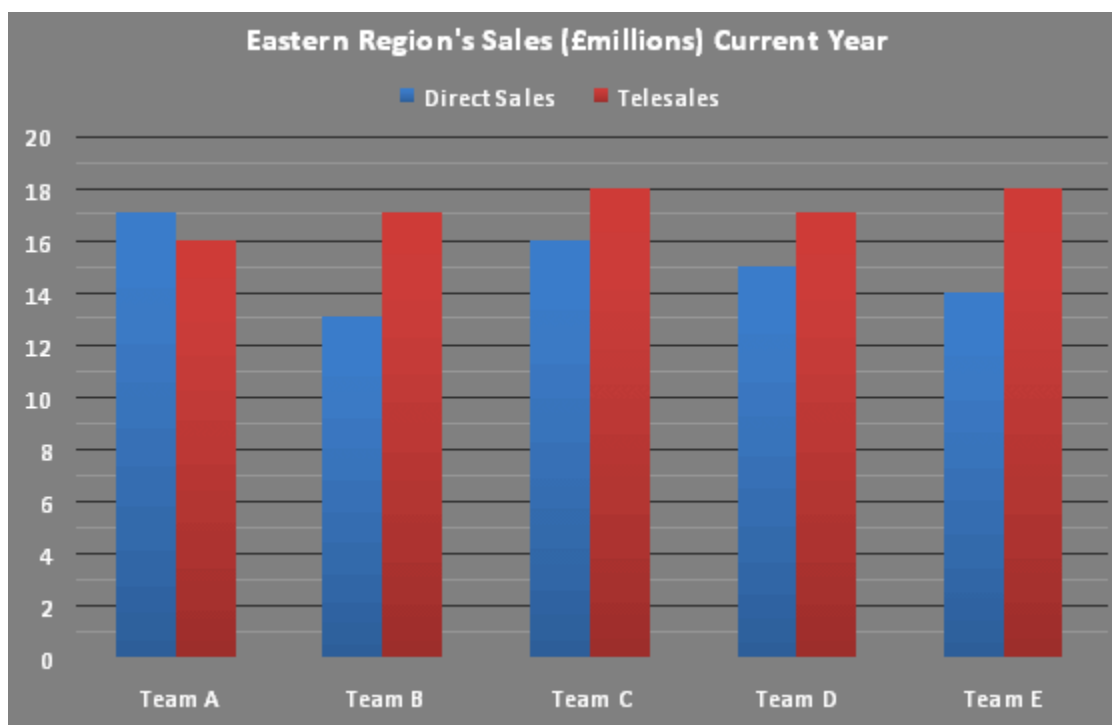
Q25 If the Worldwide Sales Director of Reyes Heslop Consulting is aiming for a total sales ratio of 3:2 (American: Pacific Rim), by what absolute amount do American profits need to change if Pacific Rim profits remain constant?

- (A) £5.35 million increase
- (B) £15.1 million increase
- (C) £5.35 million decrease
- (D) None of these

Step 1 – calculate the absolute levels of American: Pacific Rim ratio sales;
£31.4 million (American): £24.5 million (Pacific Rim)

Step 2 – calculate change needed in American sales to reach 3:2 ratio
(£24.5million x 3/2) - £31.4 million = £5.35 million

Thus the correct Answer is (A) £5.35 million increase (American)



Q26 What is the difference between direct sales and telesales across the five teams

- (A) £10 million
- (B) £11 million
- (C) £12 million
- (D) £13 million

Step 1 - Calculate the total direct sales and telesales across the five teams

	Direct Sales	Telesales
Team A	17	16
Team B	13	17
Team C	16	18
Team D	15	17
Team E	14	18
TOTAL	75	86

Step 2 - Calculate the difference

$$86 - 75 = \text{£11 million}$$

Thus the correct Answer is (B) £11 million

Q27 If there are 50 direct sales and 65 telesales employees assigned to each of the Eastern region's teams A-E, what are the average sales per sales employee for the lowest performing team in terms of overall sales (to the nearest £1,000)?

- (A) Cannot tell from the data
- (B) £200,000 (direct); £340,000 (telesales)
- (C) £260,000 (direct); £260,000 (telesales)
- (D) £340,000 (telesales); £200,000 (direct)

Step 1 – obtain the lowest performing team from calculating the overall sales (direct sales and telesales combined)

Team A total = 33

Team B total = 30

Team C total = 34

Team D total = 33

Team E total = 32

So, Team B is the lowest performing team overall.

Step 2 – calculate the average sales per direct sales employee

$13/50 = 0.26$ million

Step 3 – calculate the average sales per telesales sales employee

$17/65 = 0.26$ million

Thus the correct Answer is (C) £260,000 (direct sales); £260,000 (telesales)

Q28 If the Eastern Region's total sales represent 26% of the total for all regions, what are the total sales across all regions (to the nearest £million)?

- (A) £142 million
- (B) £161 million
- (C) £619 million
- (D) £620 million

Step 1 - Calculate the total sales

86 (for telesales) + 75 (for direct sales) = £161 million

Step 2 – Calculate the total sales across all regions

£161 million = 26%

$100\% = 161 \times 100/26 = £619.23$ million

Thus the correct Answer is (C) £619 million

Q29 What are the total sales targets for next year across all five teams if the target is set as a 20% and 10% increase in this year's Direct Sales and Telesales respectively?

- (A) Direct (£75 million); Tele (£86 million)
- (B) Direct (£82 million); Tele (£104 million)
- (C) Direct (£95 million); Tele (£90 million)
- (D) Direct (£90 million); Tele (£94.6 million)

Calculate the increase in the direct sales and telesales totals, as follows;

	Direct Sales	Telesales
	17	16
	13	17
	16	18
	15	17
	14	18
Total	75	86
	$75 \times 120\% = 90$	$86 \times 110\% = 94.6$

Thus the correct Answer is (D) Direct Sales (£90 million); Telesales (£94.6 million)

Q30 If there are 5 direct sales employees and 6 telesales employees in each team, which sub-team has the lowest average sales per rep?

- (A) Direct sales (Team B)
- (B) Direct sales (Team D)
- (C) Telesales (Team A)
- (D) Telesales (Team B)

Calculate the average sales per direct sales and per telesales rep, as follows;

	Direct Sales	Telesales	Average sales (per direct sales rep)	Average sales (per telesales rep)
Team A	17	16	3.4	2.7
Team B	13	17	2.6	2.8
Team C	16	18	3.2	3
Team D	15	17	3	2.8
Team E	14	18	2.8	3

Thus the correct Answer is (A) Direct Sales (Team B)

-- End of Sample Numerical Reasoning Test 1 --

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