

Numerical Reasoning

Free Test 1



Solutions Booklet

Instructions

This practice test contains **12 questions**, and you will have **12 minutes** to answer them.

Each question will have five 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.

Share Price Index

| Company | Today's Price (€) | Change from previous day (%) | Past 12 months | |
|-----------|-------------------|------------------------------|----------------|---------------|
| | | | Max price (€) | Min price (€) |
| Huver 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 | 724 | 464 |
| Steapars | 2,537 | 1.00 | 2,630 | 2,216 |

Dividend Index

| Dividend paid per share (€) | Huver Co. | Drebs Ltd | Fevs Plc | Fauvers | Steapars |
|-----------------------------|-----------|-----------|----------|---------|----------|
| Interim Dividend | 0.83 | 0.44 | 0.34 | 0.09 | 0.48 |
| Final Dividend | 1.75 | 1.12 | 1.25 | 0.32 | 0.96 |

Note: the total annual dividend paid per share is the sum of the interim dividend and the final dividend.

Q1 Which share had the largest difference between highest and lowest price over the last 12 months?

Answer: (C) Fevs Plc

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

Step 1: Calculate the difference between the maximum and the minimum prices.

$$\text{Huver Co.} = 1,360 - 860 = 500$$

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

$$\text{Fevs Plc} = 1,955 - 1,242 = 713$$

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

$$\text{Steapars} = 2,630 - 2,216 = 414$$

Tip: Notice the wording of the question is asking for the share with the largest absolute change in price, NOT the largest percentage change, which would have been Drebs Ltd. If the question had wanted the percentage change it would have used the word percentage.

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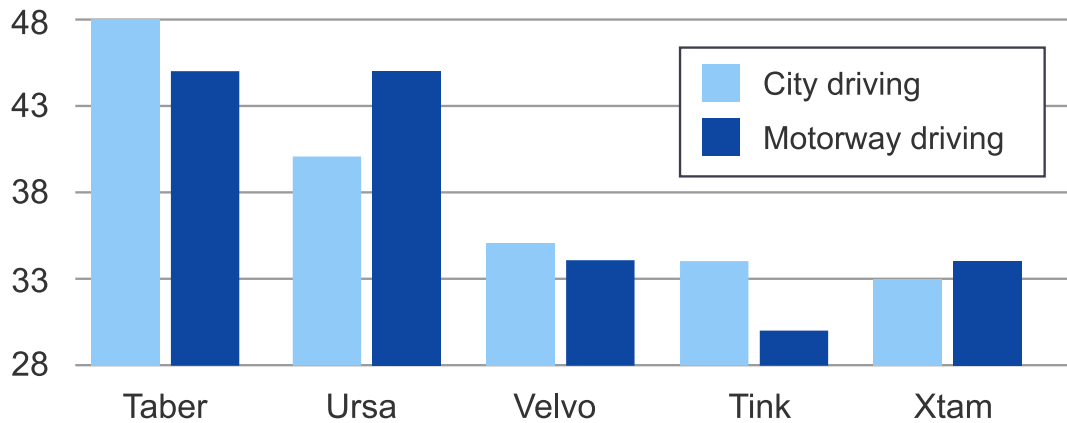
Q2 Today's Drebs Ltd share price represents a 40% increase on the price one month ago. What was the Drebs Ltd share price a month ago?

Answer: (E) €12.86

Step 1: Drebs Ltd's share price is shown as 18 Euros at today's prices. This is a 40% increase and so represents 1.40 (140%) of the price one month ago.

Step 2: The price one month ago is calculated as follows:
 $18 \div 1.40 = 12.86$.

Fuel Consumption (miles to the gallon)



| Car | Max. Speed (mph) | Cost to Purchase (£) |
|-------|------------------|----------------------|
| Taber | 65 | 12,500 |
| Ursa | 60 | 15,250 |
| Velvo | 125 | 37,500 |
| Tink | 95 | 55,250 |
| Xtam | 110 | 62,500 |

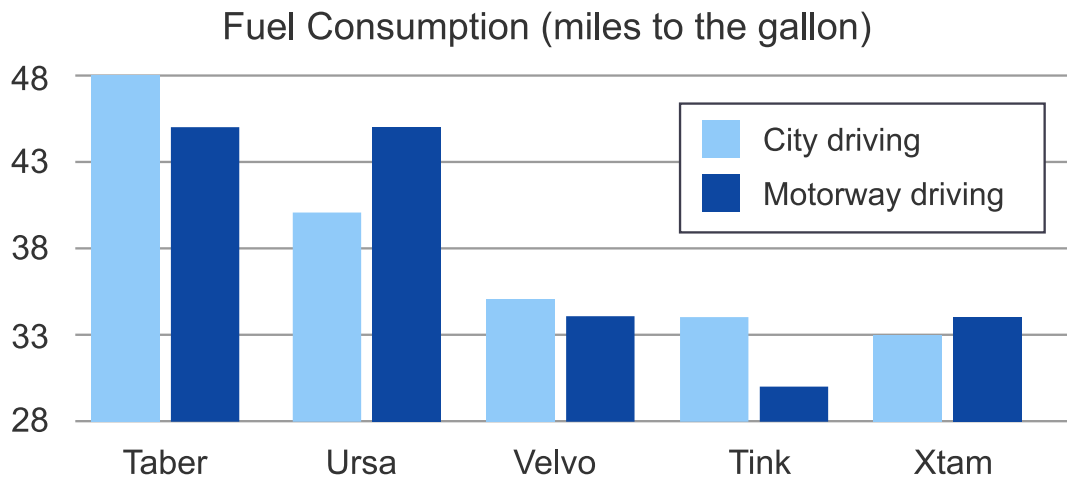
Q3 If a driver travels an average of 4,250 miles per month driving only along motorways in an Xtam car, what is the predicted annual consumption of fuel (in gallons)?

Answer: (B) 1,500

Step 1: The Xtam's fuel consumption is shown as 34 miles to the gallon for motorway driving.

So, $4,250 \text{ miles} \div 34 = 125 \text{ gallons per month}$.

Step 2: Annual petrol consumption = $125 \times 12 = 1,500 \text{ gallons}$.



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Q4 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?

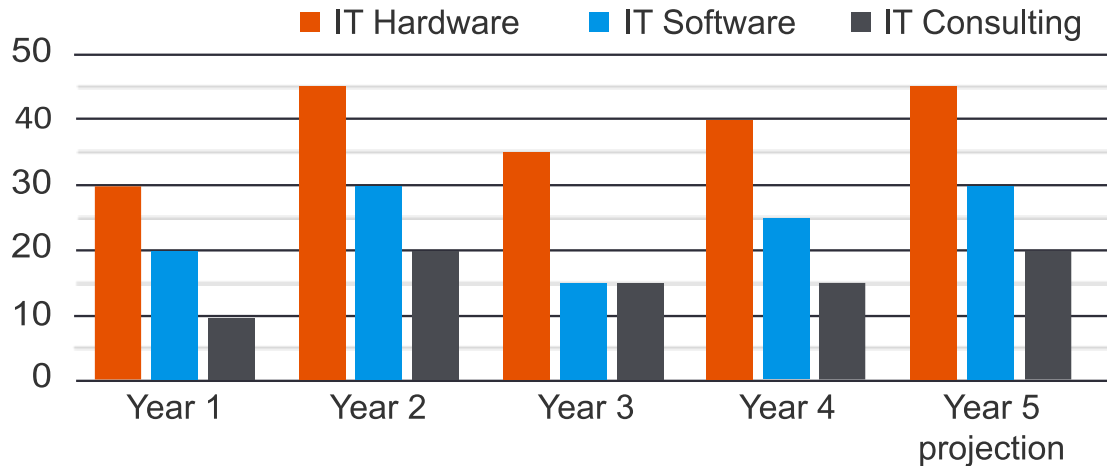
Answer: (D) 21

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: $£600,000 \div £27,750 = 21.6$

Legal Sector IT Spending (£ millions)



Two Legal Sector IT Firms Income for Consultancy Services (10,000s)

| | Make Fit Ltd | Pure Gap Plc |
|--------|--------------|--------------|
| Year 1 | 290 | 230 |
| Year 2 | 180 | 310 |
| Year 3 | 260 | 300 |
| Year 4 | 320 | 290 |

Q5 Legal sector spending on IT hardware, IT software and IT consulting are all set to increase by the same amounts in Year 6 as they did from Year 4 to Year 5. Assuming this is the case, what would be the total legal sector spending in Year 6 on these three IT areas combined?

Answer: (E) £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)

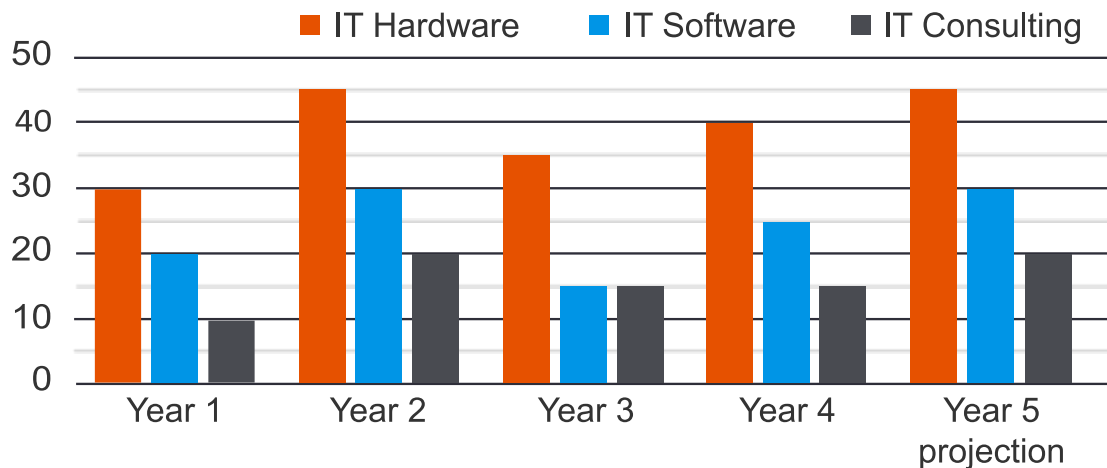
IT software = 30 (increase of £5 million from Year 4)

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

Step 2: Calculate the total for the year after the projected year 5. 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 x 5) = £110 million

Legal Sector IT Spending (£ millions)



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|--------|--------------|--------------|
| Year 1 | 290 | 230 |
| Year 2 | 180 | 310 |
| Year 3 | 260 | 300 |
| Year 4 | 320 | 290 |

Q6 Which of the following statements is false regarding legal sector spending between Year 4 and projected Year 5?

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

Step 1: Check in turn whether each statement is true or false:

- a) The projected spend on IT consulting is projected to increase by £5million. Option A is true.
- b) The projected spend on IT consulting is £20million, which matches year 2. Option B is true.
- c) The projected spend on IT software is £30million and for IT consulting it's £20million. Option C is true.
- d) There are increases projected for IT hardware, for IT software and for consulting, therefore 'Spending on IT hardware will decline' is not true. The option for D is false.
- e) We see that option D is false, so E cannot be the correct answer.

January's Sales Turnover and Profit

| IKE Computers (January) | Actual (£) | Target (£) |
|-------------------------|------------|------------|
| Sales Turnover | 277,350 | 325,000 |
| Sales Tax (14%) | 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 |

Q7 IKE Computers aim to grow monthly gross profit by 1.5%. If all costs remain constant, what will the sales turnover need to be in February to hit the target?

Answer: (B) £277,987

Step 1: Calculate the required gross profit increase. $36,521 \times 1.5\% = £547.82$. Given that costs are constant, this means the Net Turnover needs to increase By £547.8 too. So the Net Turnover needs to be $£547.8 + £238,521 = £239,068.8$.

Step 2: We have worked out the Net Turnover, but the question asks for Sales Turnover (i.e. before the sales tax of 14.0% is deducted). So Sales Turnover = $239,068.8 \div 86.0\% = £277,986.98$.

January's Sales Turnover and Profit

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Q8 If IKE Computers employed eighty permanent employees in January who were on the same salary, what would have been the effect on labour costs if they had replaced twenty permanent employees with interim staff each on monthly salaries of £3,000?

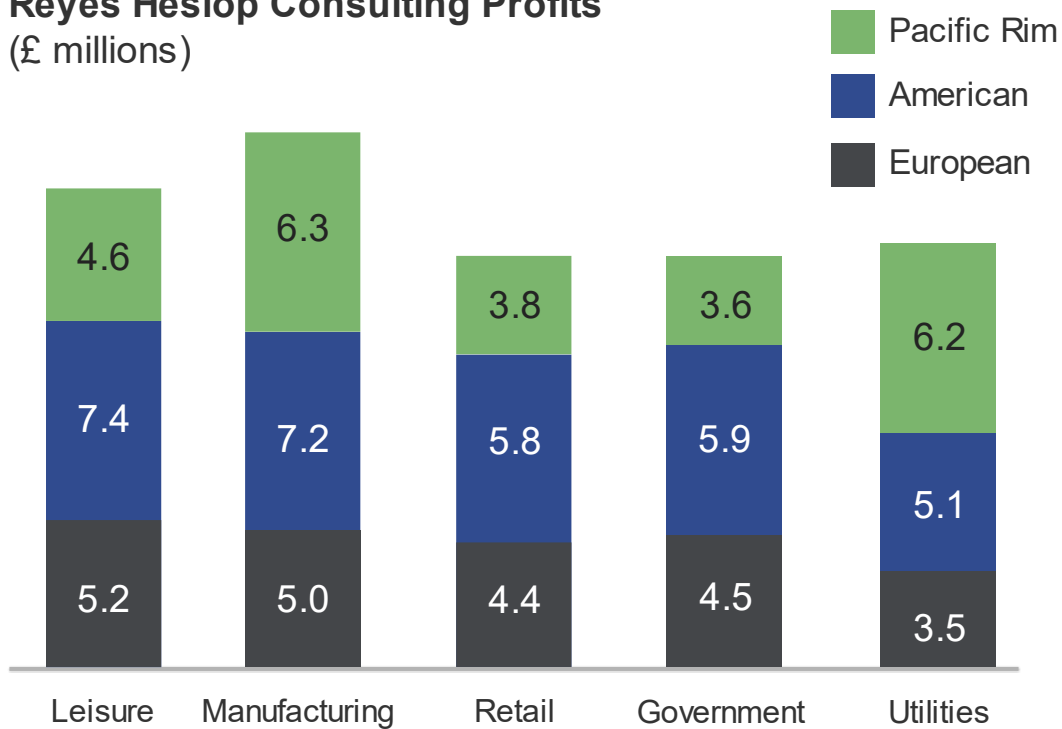
Answer: (E) Increase of £18,500

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
 $3,000 - 2,075 = 925$

Step 3: Calculate the difference of replacing 20 full time employees with interims
 $925 \times 20 = £18,500$.

Reyes Heslop Consulting Profits (£ millions)

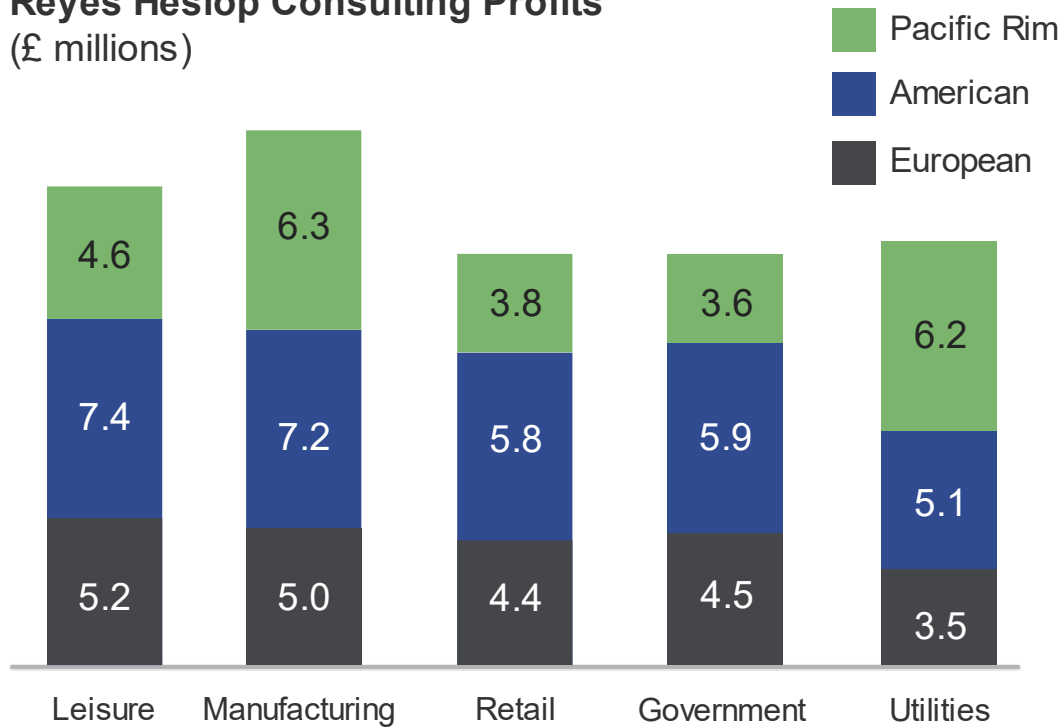


Q9 If the ratio of profit to turnover for Pacific Rim contracts was 2:15, what was the Government turnover in the Pacific Rim (in £100,000s)?

Answer: (C) 270

Step 1: *Contracts ratio of profit (£3.6million) to turnover = 2:15*
Turnover = £3.6 million \times 15/2 = £27 million = 270 (in £100,000s)

Reyes Heslop Consulting Profits (£ millions)



Q10 Reyes Heslop had a target for Leisure profits to be a quarter of their total profits. Assuming profits in other areas remain the same, by how much did the Leisure profits miss this target?

Answer: (D) £3.2 million

Step 1: Calculate the total Reyes Heslop profits across all areas other than Leisure.
 $(6.3 + 7.2 + 5.0) + (3.8 + 5.8 + 4.4) + (3.6 + 5.9 + 4.5) + (6.2 + 5.1 + 3.5) = 61.3 \text{ million}$.

Step 2: This needs to be $\frac{3}{4}$ of all profits for the condition to be met. Therefore all profits, across all sectors, would be $61.3 \div 75\% = 81.7333 \text{ million}$.

Step 3: Now we look at the difference between actual and target Leisure profits.

Actual = $(4.6 + 7.4 + 5.2) = 17.2$

Target = $(81.7333 - 61.3) = 20.4333$

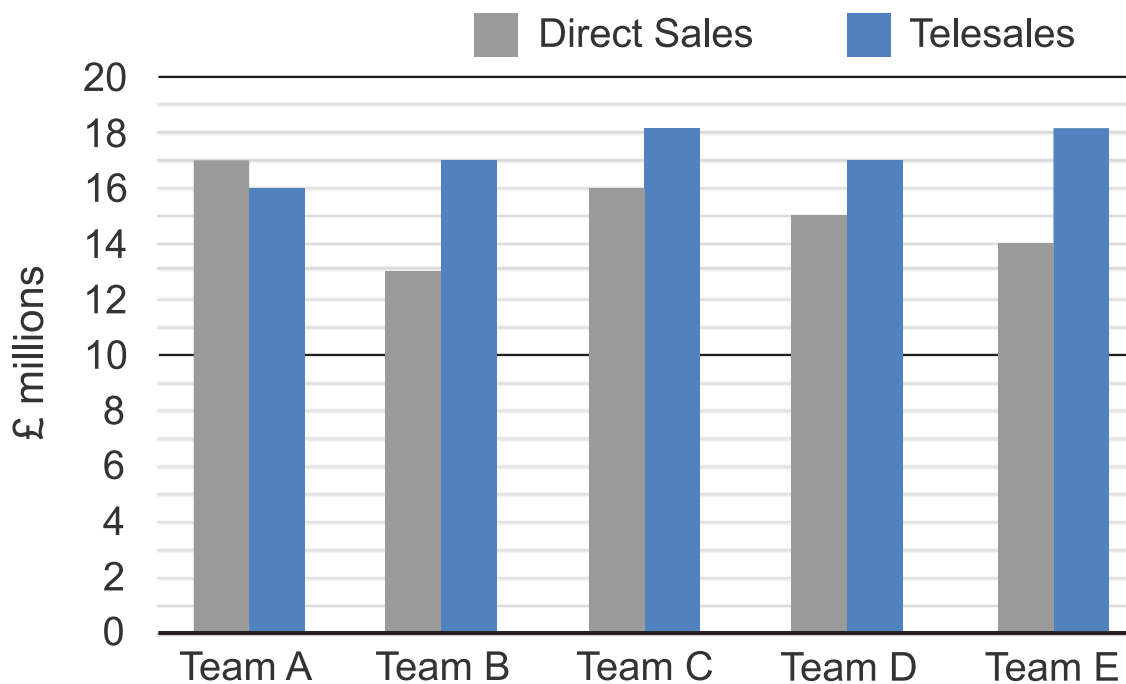
Shortfall = 3.2333 (millions)

Note: the INCORRECT way of doing this question would be to:

Sum profits across all areas, calculate $\frac{1}{4}$, then see the difference between that figure and 17.2 million. This method would calculate $\frac{1}{4}$ of the profits including the reduced

figure from Leisure.

Eastern Region's Sales - Current Year



Q11 What is the difference between direct sales and telesales across the five teams combined?

Answer: (B) £11 million

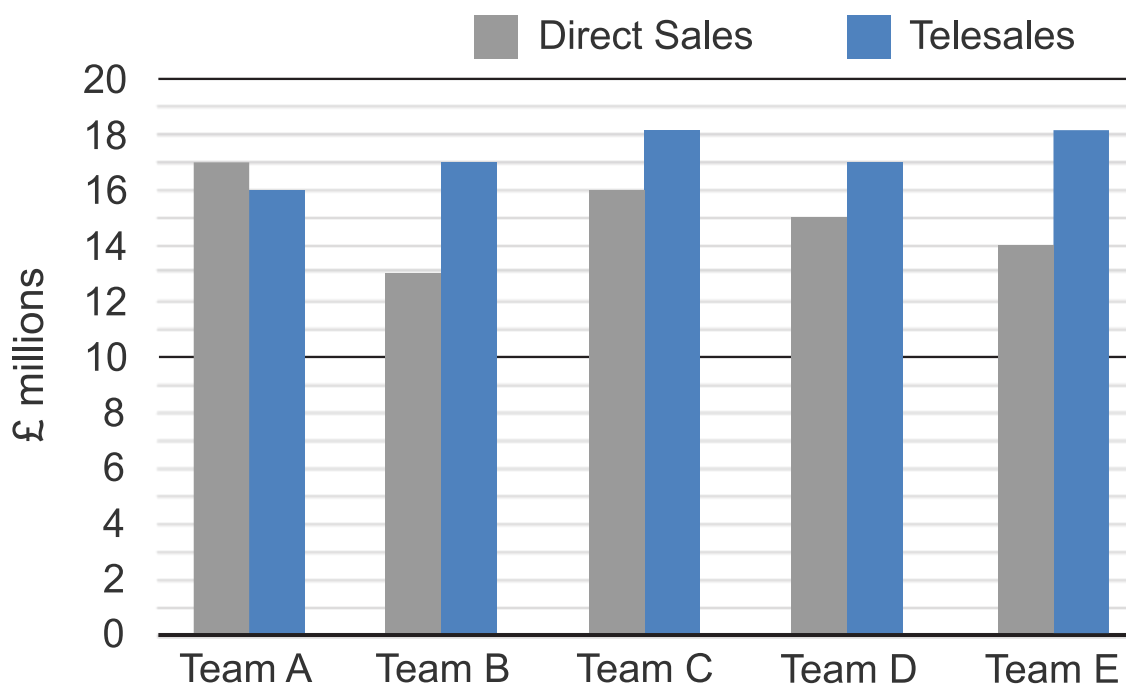
Step 1: Calculate the total direct sales and telesales across the five teams:

| | 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

$$86 - 75 = \text{£}11 \text{ million}$$

Eastern Region's Sales - Current Year



Q12 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)?

Answer: (D) £619 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

End of test