

1 Work out $\frac{3}{7} \times \frac{5}{8}$.

Give your answer as a fraction.

Answer [1]

- 2 Amisi travelled from Johannesburg to Cairo.
She changed 500 Egyptian pounds (EGP) to South African rand (ZAR) when the exchange rate was
1 EGP = 1.24 ZAR.

Calculate the amount she received.

Answer ZAR [1]

- 3 Write the following numbers correct to one significant figure.

(a) 7682

Answer(a) [1]

(b) 0.07682

Answer(b) [1]

- 4 Mars is ninety-one million, seven hundred thousand kilometres from Earth.

(a) Write this number in figures.

Answer(a) [1]

(b) Write your answer to **part (a)** in standard form.

Answer(b) [1]

- 5 A bowl of fruit contains only 8 peaches, 5 oranges and 6 apples.
One piece of fruit is chosen at random.

Write down the probability that it is

- (a) an orange,

Answer(a) [1]

- (b) not a peach.

Answer(b) [1]

- 6 The formula for changing a temperature in Celsius to a temperature in Fahrenheit is $F = 1.8C + 32$.

Make C the subject of the formula.

Answer $C =$ [2]

7 $\mathbf{a} = \begin{pmatrix} 4 \\ -1 \end{pmatrix}$ $\mathbf{b} = \begin{pmatrix} -2 \\ -3 \end{pmatrix}$

Work out $\mathbf{a} + 3\mathbf{b}$.

Answer $\left(\begin{array}{c} \\ \end{array} \right)$ [2]

8 Work out.

(a) $4 - 5 - 6$

Answer(a) [1]

(b) $\frac{-8}{-2}$

Answer(b) [1]

9 Patrick buys some bananas for \$35.
He sells all the bananas for \$40.60.

Calculate his percentage profit.
Show all your working.

Answer % [3]

10

12 13 14 15 16 17 18

From the list of numbers, write down

(a) a factor of 36,

Answer(a) [1]

(b) a multiple of 8,

Answer(b) [1]

(c) a prime factor of 52.

Answer(c) [1]

- 11 An athlete runs 1500 metres in 4 minutes.

Calculate her average speed in

- (a) metres per minute,

Answer(a) m/min [1]

- (b) kilometres per hour.

Answer(b) km/h [2]

- 12 In a traffic survey of 125 cars the number of people in each car was recorded.

| | | | | | |
|------------------------------|----|----|----|----|---|
| Number of people in each car | 1 | 2 | 3 | 4 | 5 |
| Frequency | 50 | 40 | 10 | 20 | 5 |

Find

- (a) the range,

Answer(a) [1]

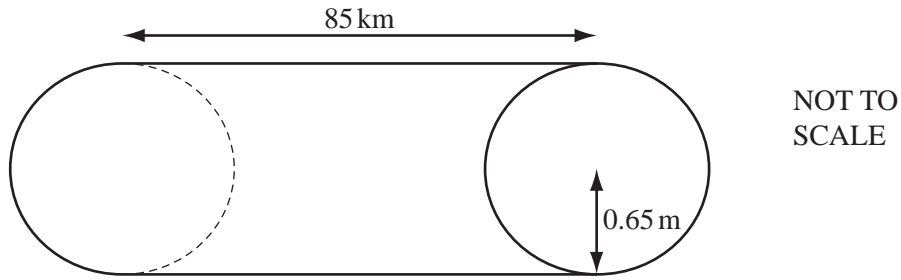
- (b) the median,

Answer(b) [1]

- (c) the mode.

Answer(c) [1]

13



A water pipeline in Australia is a cylinder with **radius 0.65 metres** and length **85 kilometres**.

Calculate the volume of water the pipeline contains when it is full.
Give your answer in cubic metres.

Answer m³ [3]

14 A shop is open during the following hours.

| | Monday to Friday | Saturday | Sunday |
|--------------|------------------|----------|--------|
| Opening time | 06 45 | 07 30 | 08 45 |
| Closing time | 17 30 | 17 30 | 12 00 |

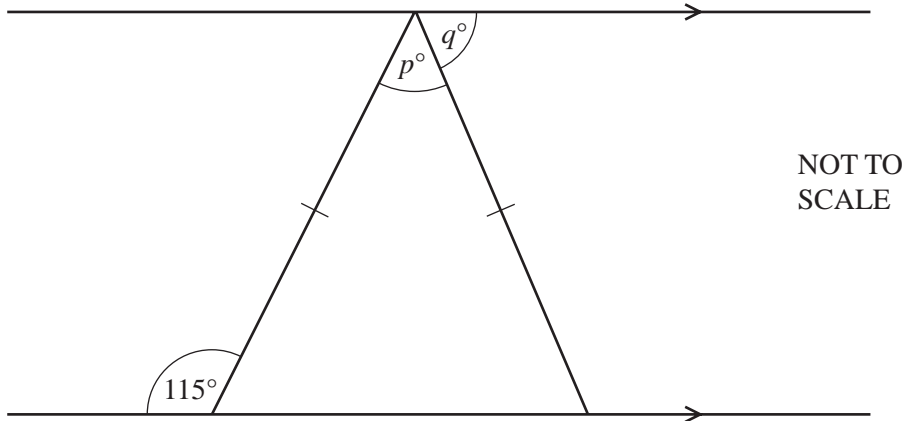
(a) Write the closing time on Saturday in the 12-hour clock time.

Answer(a) [1]

(b) Calculate the total number of hours the shop is open in one week.

Answer(b) h [2]

- 15 The diagram shows an isosceles triangle between two parallel lines.



Calculate

- (a) the value of p ,

Answer(a) $p = \dots\dots\dots$ [2]

- (b) the value of q .

Answer(b) $q = \dots\dots\dots$ [1]

- 16 Musa borrows \$600 for 2 years at a rate of 7.5% per year compound interest.
At the end of the 2 years she repays the amount owing in full.

Calculate the total amount she has to repay.
Give your answer correct to the nearest dollar.

Answer \$ $\dots\dots\dots$ [3]

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17 (a) Factorise completely.

$$6x^2 - 8xy$$

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Answer(a) [2]

(b) Simplify the following expression.

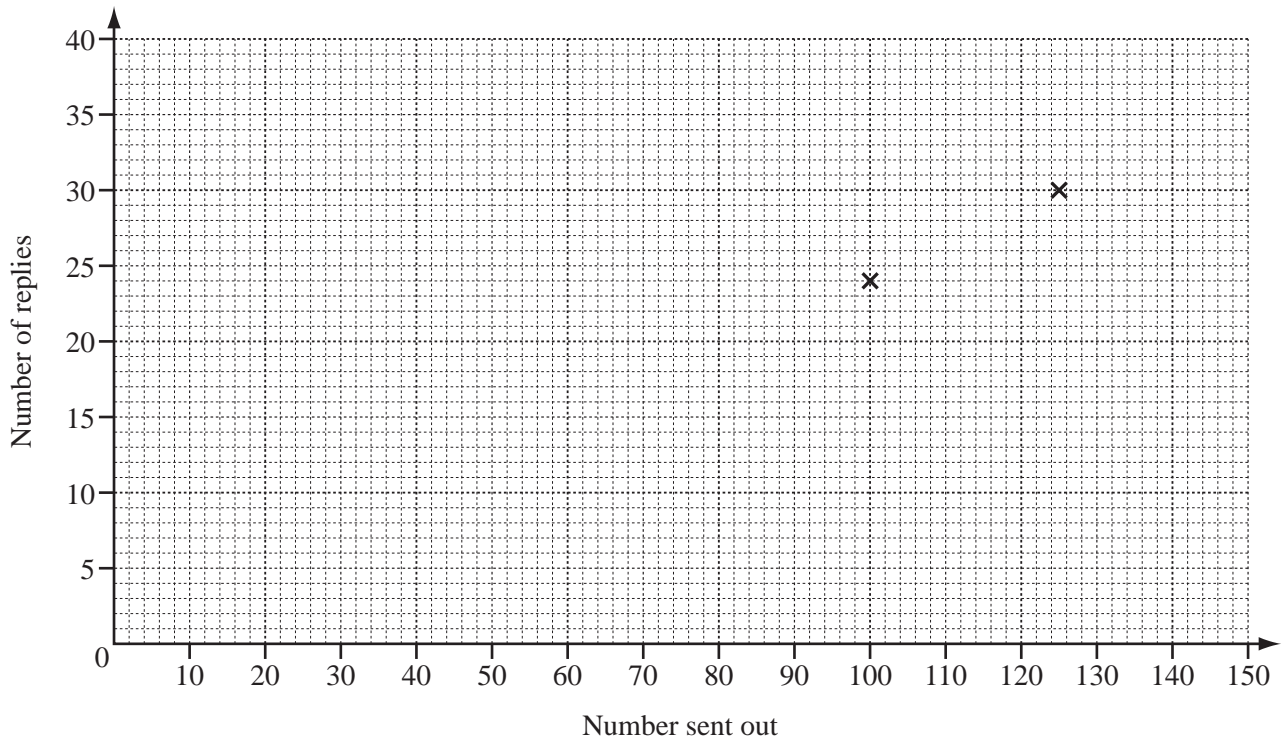
$$28a^5 \div 4a^{-2}$$

Answer(b) [2]

- 18 A company sends out ten different questionnaires to its customers.
The table shows the number sent and replies received for each questionnaire.

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Use*

| Questionnaire | A | B | C | D | E | F | G | H | I | J |
|-------------------|-----|-----|-----|-----|----|-----|-----|----|-----|-----|
| Number sent out | 100 | 125 | 150 | 140 | 70 | 105 | 100 | 90 | 120 | 130 |
| Number of replies | 24 | 30 | 35 | 34 | 15 | 25 | 22 | 21 | 30 | 31 |



- (a) Complete the scatter diagram for these results.
The first two points have been plotted for you. [2]

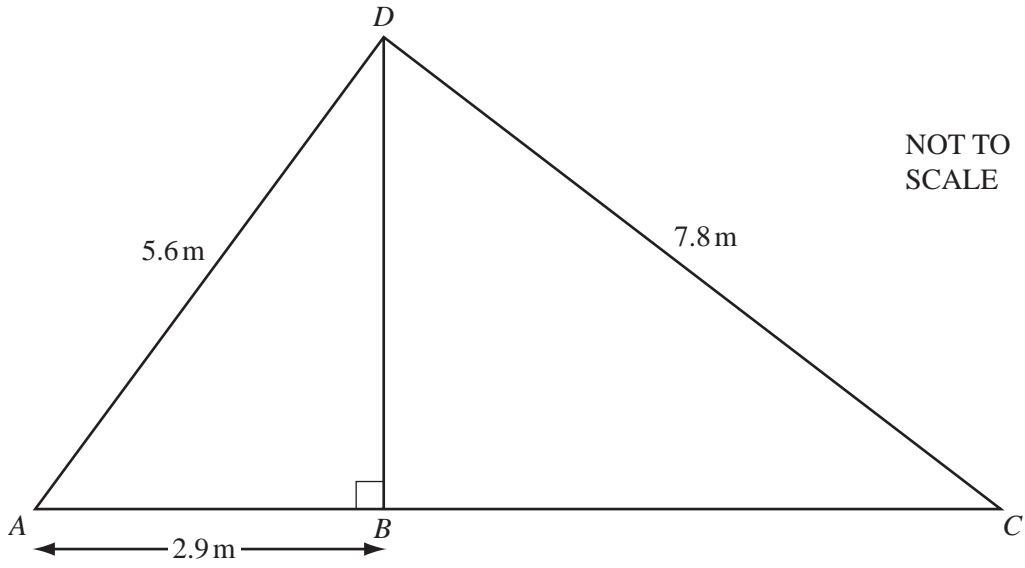
- (b) Describe the correlation between the two sets of data.

Answer(b) [1]

- (c) Draw the line of best fit. [1]

19

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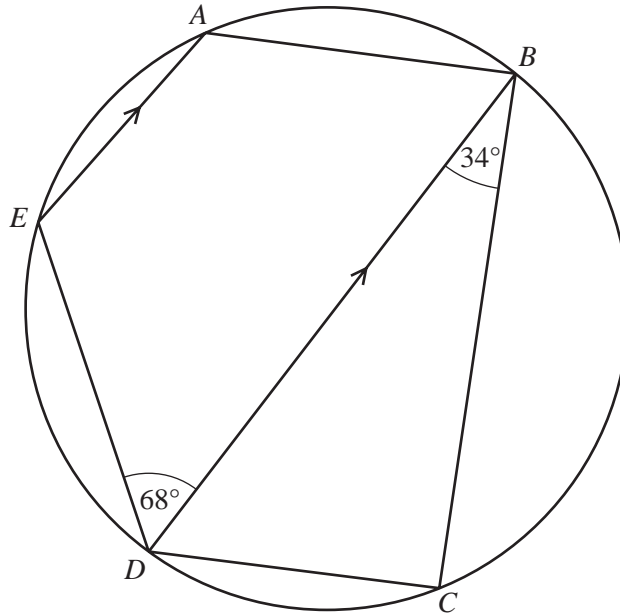
(a) Calculate BD .

Answer(a) $BD = \dots\dots\dots$ m [3]

(b) $DC = 7.8$ m.

Use trigonometry to calculate angle BCD .

Answer(b) Angle $BCD = \dots\dots\dots$ [2]



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The points A, B, C, D and E lie on a circle with diameter BD .
 AE is parallel to BD .
 Angle $BDE = 68^\circ$ and angle $DBC = 34^\circ$.

- (a) Give the reason why angle BCD is 90° .

Answer(a) [1]

- (b) Find

- (i) angle BDC ,

Answer(b)(i) [1]

- (ii) angle DEA .

Answer(b)(ii) [1]

- (c) Find the sum of the angles of the pentagon $ABCDE$.

Answer(c) [2]

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