

- 1 A doctor starts work at 20:40 and finishes work at 06:10 the next day.

How long is the doctor at work?
Give your answer in hours and minutes.

Answer h min [1]

- 2 Write 53 400 000 in standard form.

Answer [1]

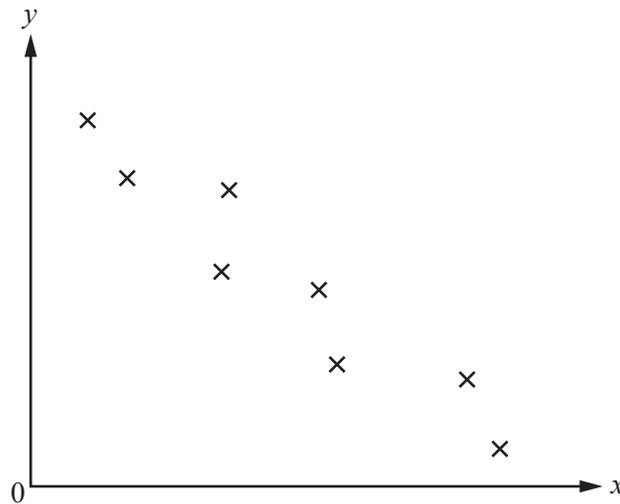
- 3 Write down the gradient of the line $y = -3x + 4$.

Answer [1]

- 4 Simplify $5x^0$.

Answer [1]

5



What type of correlation is shown on the scatter diagram?

Answer [1]

6 Write 64% as

(a) a decimal,

Answer(a) [1]

(b) a fraction in its simplest form.

Answer(b) [1]

7 Expand the brackets and simplify.

$$5(x - 3) - 3(x - 5)$$

Answer [2]

8 Write the following in order of size, starting with the smallest.

$$3^{-2} \quad 0.11 \quad \frac{2}{17} \quad \sqrt{0.011}$$

Answer < < < [2]
smallest

9 A biased 4-sided dice is rolled.

The possible scores are 1, 2, 3 or 4.

The probability of rolling a 1, 3 or 4 is shown in the table.

Score	1	2	3	4
Probability	0.15		0.3	0.35

Complete the table.

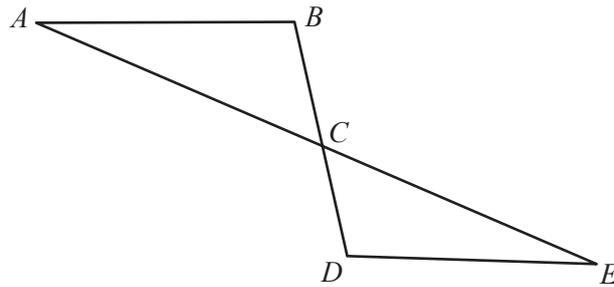
[2]

10 Factorise completely.

$$3x^2y - 5xyz$$

Answer [2]

11



NOT TO
SCALE

The diagram shows two straight lines, AE and BD , intersecting at C .

Angle $ABC =$ angle EDC .

Triangles ABC and EDC are congruent.

Write down **two** properties of line segments AB and DE .

Answer AB and DE are

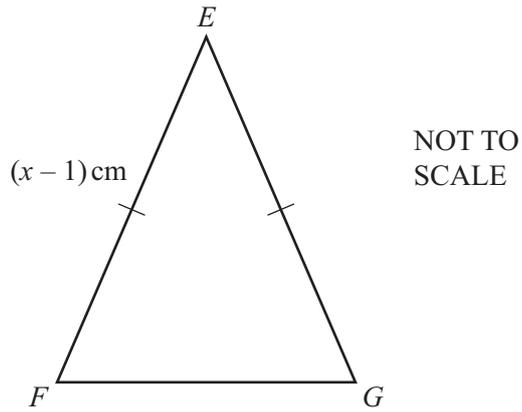
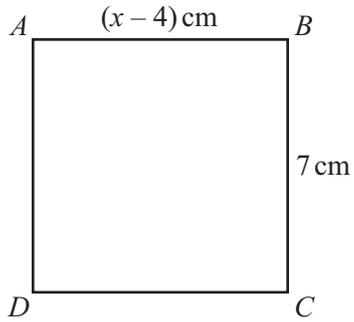
and [2]

12 Without using a calculator, work out $\frac{4}{5} \div 2\frac{2}{3}$.

Write down all the steps of your working and give your answer as a fraction in its simplest form.

Answer [3]

13



- (a) $ABCD$ is a square.

Find the value of x .

Answer(a) $x = \dots\dots\dots$ [1]

- (b) Square $ABCD$ and isosceles triangle EFG have the same perimeter.

Work out the length of FG .

Answer(b) $FG = \dots\dots\dots$ cm [2]

- 14 Bernard invests \$480 at a rate of 4.5% per year compound interest.

Calculate the amount he receives at the end of 3 years.

Answer \$ [3]

- 15 A random sample of 200 families was taken from the families in a city.
The number of children in each family was recorded.
The results are shown in the table below.

Number of children in a family	0	1	2	3	4	5 or more
Number of families	25	41	73	42	13	6

- (a) Find the relative frequency of families with 2 children.

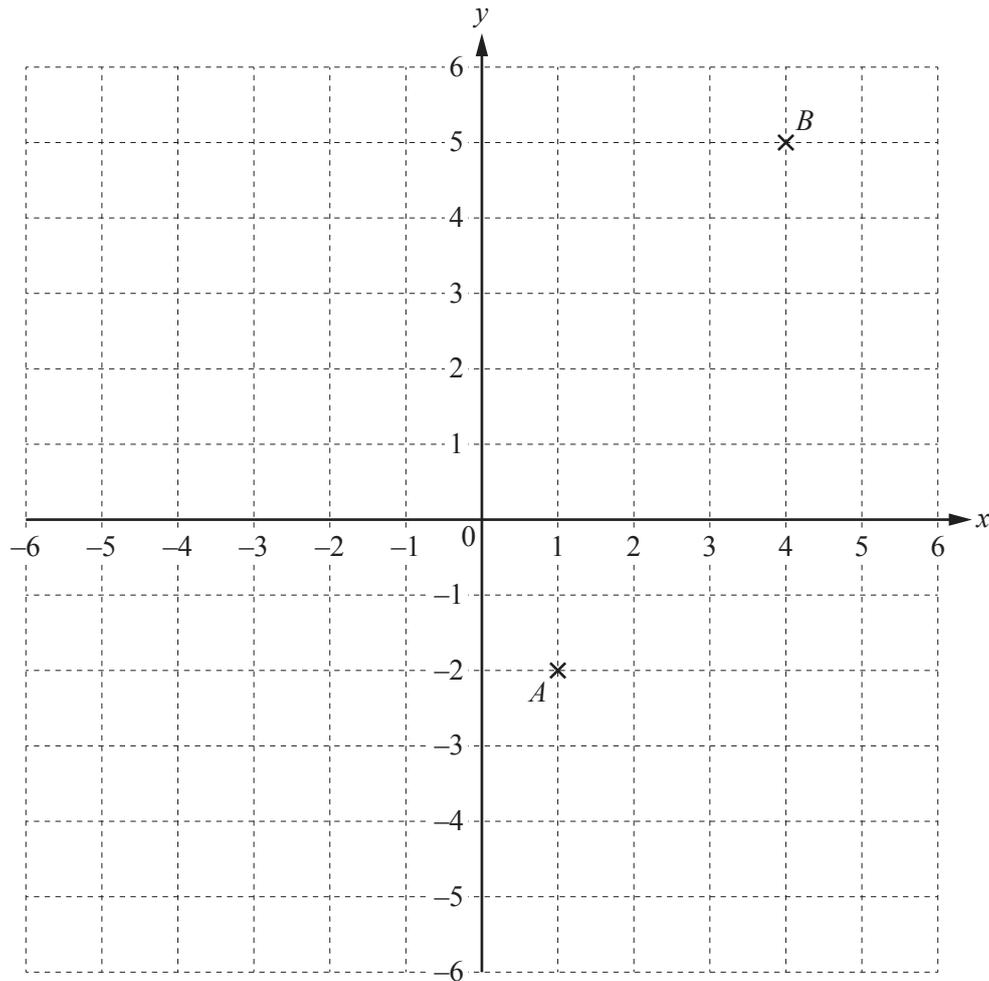
Answer(a) [1]

- (b) There are 5400 families in the city.

Find an estimate of the number of families with 2 children.

Answer(b) [2]

16



The diagram shows two points, A and B .

(a) Write down the column vector \vec{AB} .

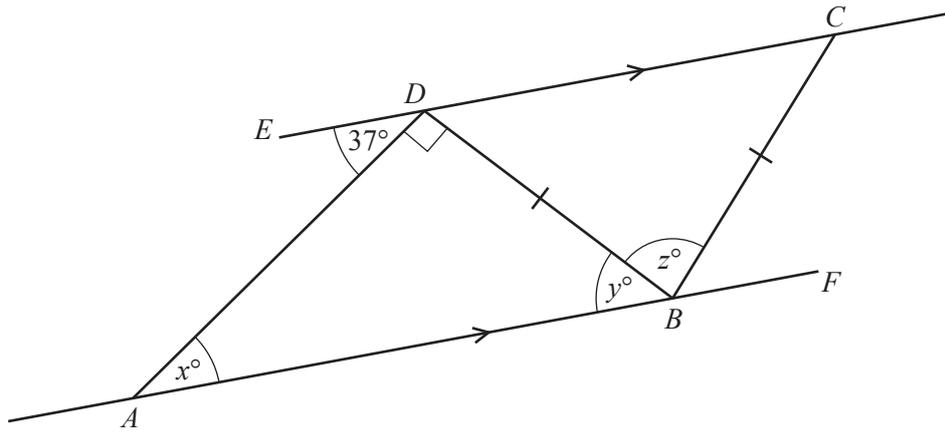
$$\text{Answer(a) } \vec{AB} = \begin{pmatrix} \\ \end{pmatrix} \quad [1]$$

(b) $\vec{AC} = \begin{pmatrix} -5 \\ 2 \end{pmatrix}$

(i) On the grid, mark the point C . [1]

(ii) Write down the co-ordinates of C .

Answer(b)(ii) (.....,) [1]



NOT TO SCALE

In the diagram, ABF is parallel to EDC .
 Angle $EDA = 37^\circ$, angle ADB is a right angle and $BC = BD$.

Find the value of

(a) x ,

Answer(a) $x = \dots\dots\dots$ [1]

(b) y ,

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

(c) z .

Answer(c) $z = \dots\dots\dots$ [2]

18 (a) Write down the next two terms in the following sequence.

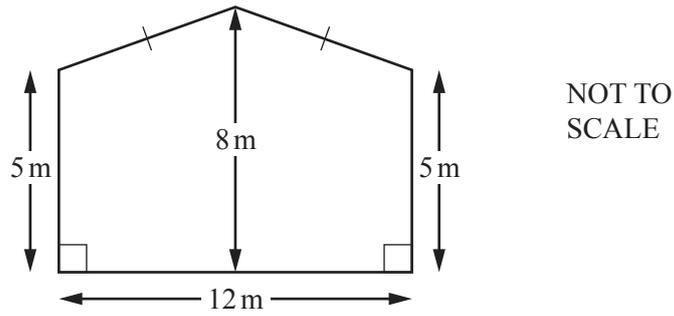
73, 66, 59, 52,,

[2]

(b) Write down an expression for the n th term of the sequence in part (a).

Answer(b), [2]

19



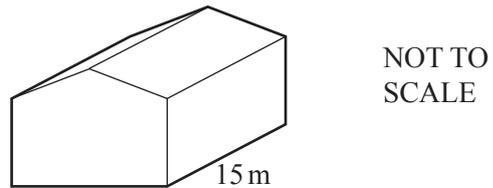
The diagram shows the front face of a barn.
 The width of the barn is 12 m.
 The height of the barn is 8 m.
 The sides of the barn are both of height 5 m.

(a) Work out the area of the front face of the barn.

Answer(a) m² [3]

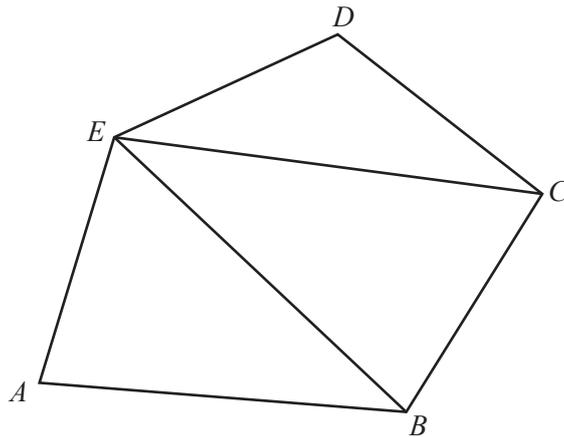
(b) The length of the barn is 15 m.

Work out the volume of the barn.



Answer(b) m³ [1]

20 (a)



$ABCDE$ is a pentagon.

Explain why the diagram shows that the sum of the interior angles of a pentagon is 540° .
Do not measure any angles.

Answer(a) [1]

- (b) Two interior angles of a pentagon are 79° and 53° .
The other three angles are in the ratio $1 : 3 : 4$.

Calculate the size of each of these three angles.

Answer(b) [4]

21 The average monthly temperatures ($^{\circ}\text{C}$) in Silvas, Turkey, are shown in the table below.

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Temperature ($^{\circ}\text{C}$)	-4	-3	2	8	13	17	19	20	16	11	8	-1

(a) Which month is the coldest?

Answer(a) [1]

(b) Work out the difference between the temperature in November and the temperature in December.

Answer(b) $^{\circ}\text{C}$ [1]

(c) Find the median temperature.

Answer(c) $^{\circ}\text{C}$ [2]

(d) Calculate the mean temperature.
Give your answer correct to 2 significant figures.

Answer(d) $^{\circ}\text{C}$ [3]

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