

- 1 Insert **one pair** of brackets only to make the following statement correct.

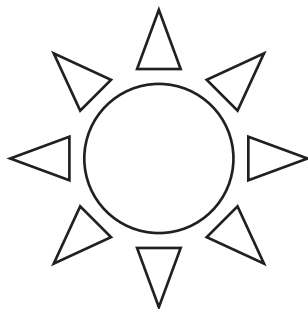
$$6 + 5 \times 10 - 8 = 16$$

[1]

- 2 Calculate $\frac{8.24 + 2.56}{1.26 - 0.72}$.

Answer [1]

3



Write down the order of rotational symmetry of this shape.

Answer [1]

- 4 (a) Write down two whole numbers that have a product of -15 .

Answer(a) and [1]

- (b) During one year, the temperature in Ulaanbaatar varied from -33°C to 27°C .

Find the range of the temperatures during that year.

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

- 5 Work out the value of $3^4 \div 3^{-2}$.
Give your answer as an ordinary number.

Answer [2]

- 6 Indira measures the length, l centimetres, of her desk as 95.6 cm, correct to the nearest millimetre.
Complete the statement about the value of l .

Answer $\forall l <$ [2]

- 7 (a) Complete the following list of factors of 30.

1, 2,, 5,, 10,, 30

[1]

- (b) Write down the prime factors of 30.

Answer(b) [1]

- 8 (a) Write 640 000 in standard form.

Answer(a) [1]

- (b) Write 7.82×10^{-4} as an ordinary number.

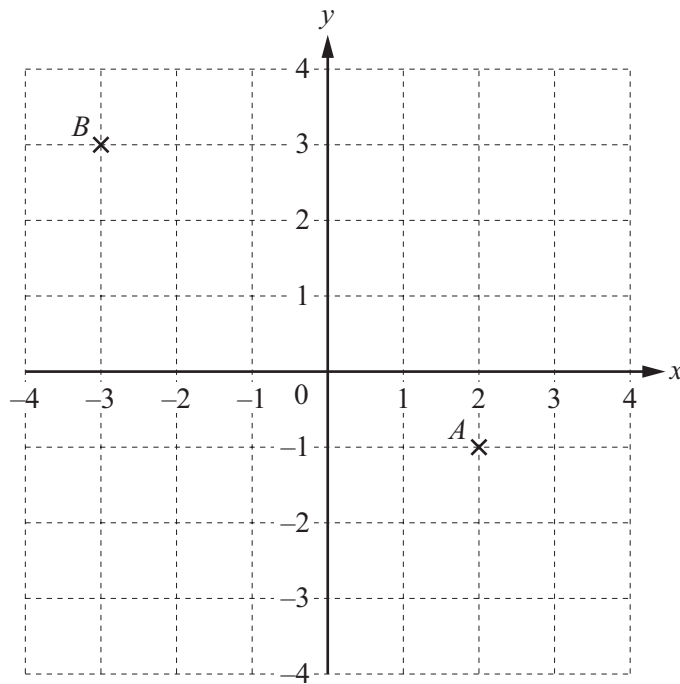
Answer(b) [1]

9 Make y the subject of the formula.

$$8 + 5y - 3x = 0$$

Answer $y = \dots\dots\dots$ [2]

10



Points A and B are shown on the grid.

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

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

(b) Write $3\vec{AB}$ as a column vector.

$$\text{Answer(b) } 3\vec{AB} = \begin{pmatrix} \quad \\ \quad \end{pmatrix} \quad [1]$$

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

$$\frac{15}{37} \quad 0.41 \quad 40.4\% \quad \frac{17}{42}$$

Answer < < < [2]

12 (a) Simplify $5k - 7k + 4k$.

Answer(a) [1]

(b) Find the value of $8x - 3y$ when $x = -2$ and $y = -5$.

Answer(b) [2]

13 For her holiday, Alyssa changed 2800 Malaysian Ringgits (MYR) to US dollars (\$) when the exchange rate was 1 MYR = \$0.325 .

At the end of her holiday she had \$210 left.

(a) How many dollars did she spend?

Answer(a) \$ [2]

(b) She changed the \$210 for 750 MYR.

What was the exchange rate in dollars for 1 MYR?

Answer(b) 1 MYR = \$ [1]

- 14 Without using a calculator, work out $1\frac{1}{6} \div \frac{7}{8}$.

Show all your working and give your answer as a fraction in its lowest terms.

Answer [3]

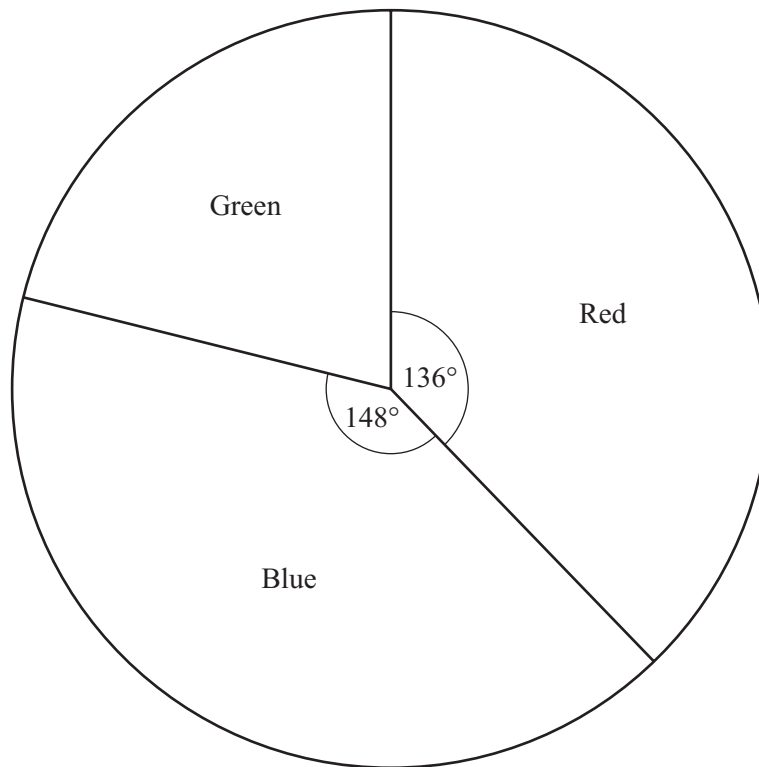
- 15 Solve the simultaneous equations.
You must show all your working.

$$\begin{aligned}9x + 2y &= 8 \\5x + 6y &= -20\end{aligned}$$

Answer $x =$

$y =$ [3]

- 16** A bag contains different coloured counters.
Sasha takes a counter at random, records its colour, and replaces it.
She does this 90 times and records her results in the pie chart below.



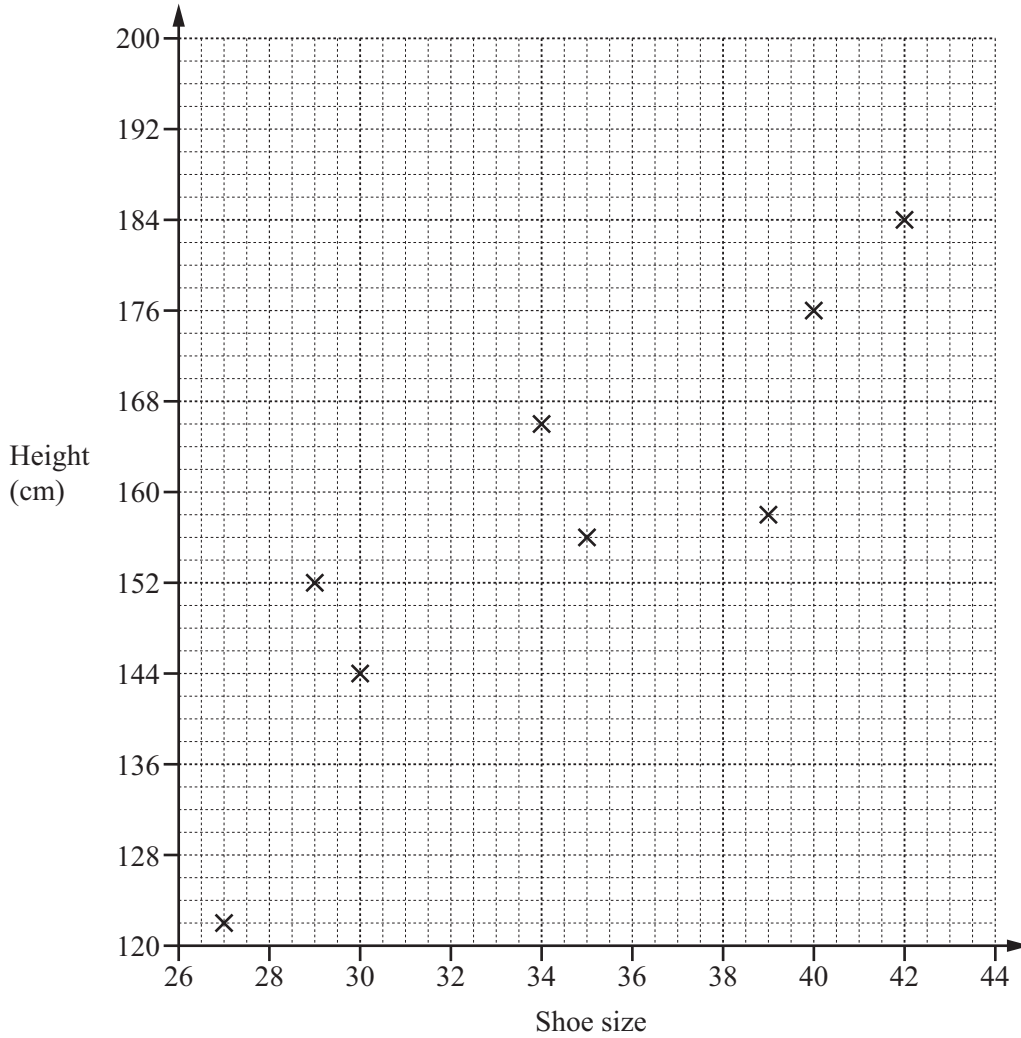
- (a)** Write down the relative frequency of Sasha choosing a red counter.

Answer(a) [1]

- (b)** Work out the number of times a green counter is chosen.

Answer(b) [3]

17 The scatter diagram shows the results of height plotted against shoe size for 8 people.



(a) Four more results are recorded.

Shoe size	28	31	38	43
Height (cm)	132	156	168	198

Plot these 4 results on the scatter diagram. [2]

(b) Draw a line of best fit on the scatter diagram. [1]

(c) What type of correlation is shown by the scatter diagram?

Answer(c) [1]

18 Find

(a) the cube root of 729,

Answer(a) [1]

(b) the two square roots of 225,

Answer(b) and [2]

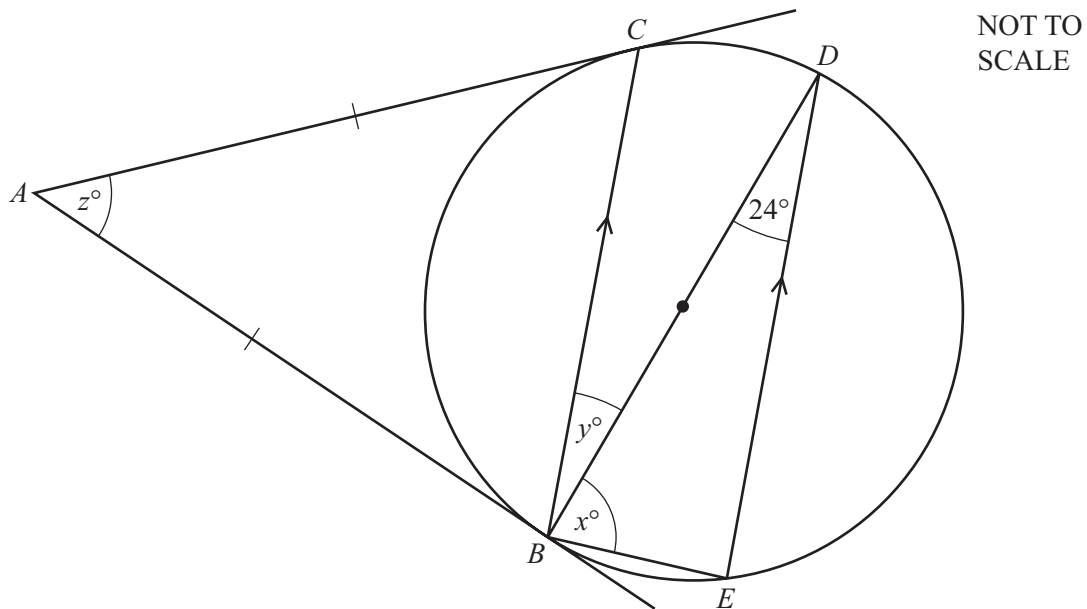
(c) a common multiple of 6 and 9,

Answer(c) [1]

(d) $(-4)^2$.

Answer(d) [1]

19



The points B, C, D and E lie on a circle.
 AB and AC are equal length tangents to the circle.
 BD is a diameter of the circle and BC is parallel to ED .
 Angle $BDE = 24^\circ$.

Calculate the value of

(a) x ,

Answer(a) $x =$ [2]

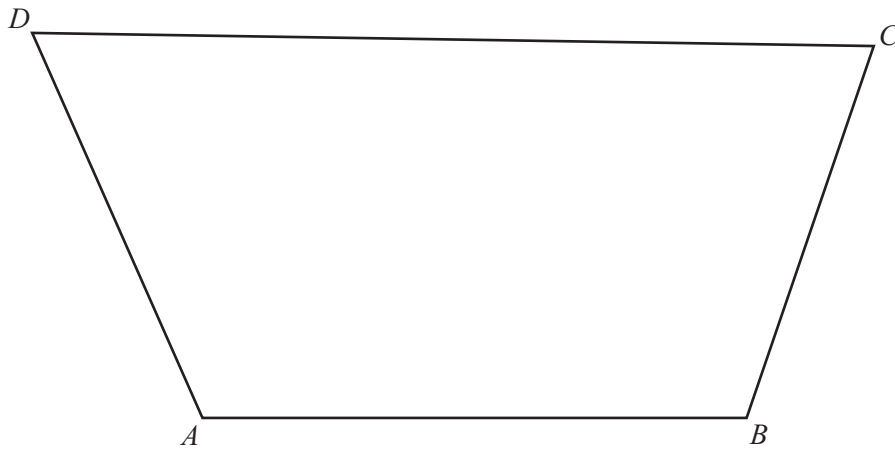
(b) y ,

Answer(b) $y =$ [1]

(c) z .

Answer(c) $z =$ [2]

- 20 The diagram shows the plan, $ABCD$, of a park.
The scale is 1 centimetre represents 20 metres.



Scale: 1 cm to 20 m

- (a) Find the actual distance BC .

Answer(a) m [2]

- (b) A fountain, F , is to be placed

- 160 m from C
- and
- equidistant from AB and AD .

On the diagram, **using a ruler and compasses only**, construct and mark the position of F .
Leave in all your construction lines.

[5]

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