

1 Write 0.13 as a fraction.

Answer [1]

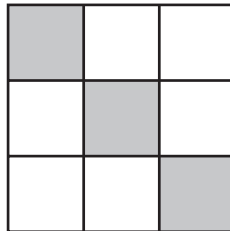
2 (a) Write in figures the number three hundred and four thousand six hundred and twenty.

Answer(a) [1]

(b) Write your answer to **part (a)** correct to 3 significant figures.

Answer(b) [1]

3



(a) Write down the order of rotational symmetry of the diagram.

Answer(a) [1]

(b) Draw the lines of symmetry on the diagram.

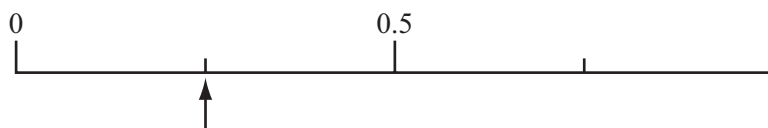
[1]

4 Calculate $\frac{9.25 + 26.4}{3.71}$.

Give your answer correct to 2 decimal places.

Answer [2]

- 5 A bag contains 20 counters.
One counter is taken from the bag at random.
The arrow on the probability scale shows the probability that this counter is blue.



- (a) Work out the number of blue counters in the bag.

Answer(a) [1]

- (b) Find the probability that the counter is **not** blue.

Answer(b) [1]

- 6 The temperature in a freezer is -20.5°C .

- (a) The temperature in a fridge is 2.8°C .

Find the difference between the temperature in the fridge and the temperature in the freezer.

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

- (b) The temperature in the freezer rises by 5°C .

Find the temperature in the freezer now.

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

- 7 Find the value of

- (a) $\sqrt[3]{2744}$,

Answer(a) [1]

- (b) 6^4 .

Answer(b) [1]

$$8 \quad \mathbf{m} = \begin{pmatrix} 5 \\ -2 \end{pmatrix} \quad \mathbf{n} = \begin{pmatrix} -3 \\ 6 \end{pmatrix}$$

Work out

(a) $\mathbf{m} + \mathbf{n}$,

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

(b) $3\mathbf{n}$.

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

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

Give your answer as a fraction and show each step of your working.

$$\text{Answer} \dots\dots\dots [2]$$

10 Make x the subject of the formula $y = 6x - 1$.

$$\text{Answer } x = \dots\dots\dots [2]$$

11 Write the following in order of size, smallest first.

$$0.34 \quad \sqrt{0.6} \quad 0.6^2 \quad 0.7^3$$

Answer < < < [2]
smallest

12 Work out $4 \times 10^{-5} \times 6 \times 10^{12}$.
 Give your answer in standard form.

Answer [2]

13 The four sector angles in a pie chart are $2x^\circ$, $3x^\circ$, $4x^\circ$ and 90° .

Find the value of x .

Answer $x =$ [2]

14 A train takes 65 minutes to travel 52 km.

Calculate the average speed of the train in kilometres per hour.

Answer km/h [2]

- 15 (a) A parcel is in the shape of a cuboid of length 18 cm, width 10 cm and height 8 cm.

Calculate the volume of the parcel.

Answer(a) cm³ [2]

- (b) The mass of the parcel is 1.7 kilograms.

Change 1.7 kilograms to grams.

Answer(b) g [1]

- 16 (a) Simplify.

$$5j + 2k + j - 3k$$

Answer(a) [2]

- (b) Factorise.

$$5p + 10$$

Answer(b) [1]

- 17 (a) Paolo thinks of a number.

It has two digits.

It is a common factor of 36 and 48.

Write down Paolo's number.

Answer(a) [1]

- (b) Maria thinks of a number.

It has two digits.

It is a common multiple of 15 and 20.

Write down Maria's number.

Answer(b) [1]

- (c) Kemar thinks of a number.

It is between 1 and 2.

It is an irrational number.

Write down a number he could be thinking of.

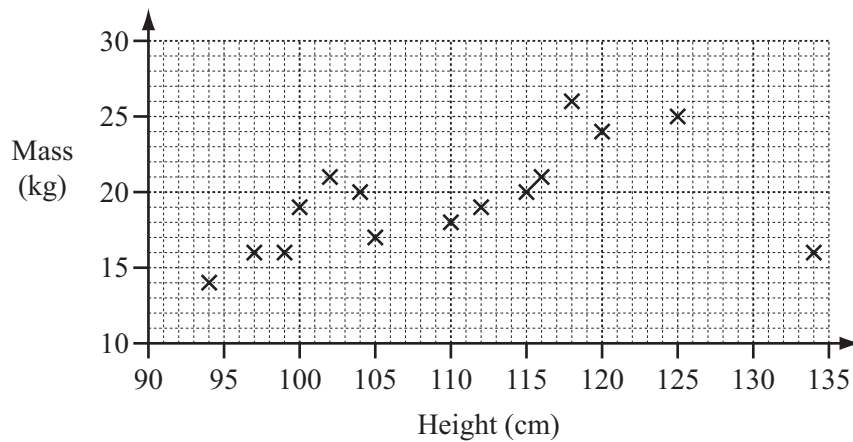
Answer(c) [1]

18 Solve the equation.

$$\frac{2x + 5}{3} = 8$$

Answer $x =$ [3]

19 The scatter diagram shows the heights and masses of some five-year-old boys.



(a) The height of one of the boys is likely to have been recorded incorrectly.

Write down the mass of this boy.

Answer(a) kg [1]

(b) What type of correlation does the scatter diagram show?

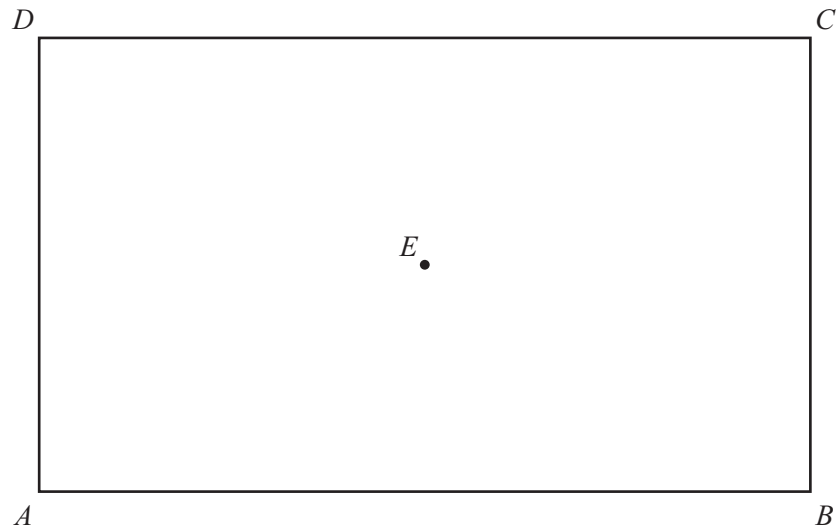
Answer(b) [1]

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

(ii) Another boy had a height of 108 cm.
His mass was not recorded.

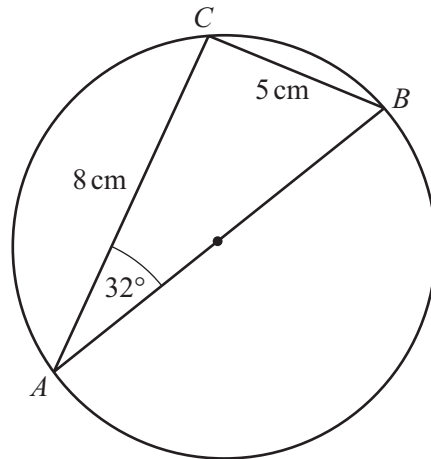
Use your line of best fit to estimate the boy's mass.

Answer(c)(ii) kg [1]



- (a) Draw the locus of the points which are 3 cm from E . [1]
- (b) Using a straight edge and compasses only, construct the bisector of angle DCB . [2]
- (c) Shade the region which is
- less than 3 cm from E
- and
- nearer to CB than to CD . [1]
-

21

NOT TO
SCALE

A , B and C lie on a circle with diameter AB .
Angle $CAB = 32^\circ$, $AC = 8$ cm and $BC = 5$ cm.

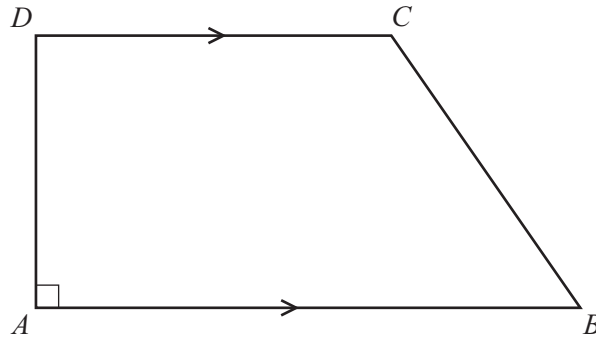
(a) Work out the size of angle CBA .

Answer(a) Angle $CBA = \dots\dots\dots$ [2]

(b) Work out the length of AB .

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

22 This is an accurate drawing of quadrilateral $ABCD$.



(a) Write down the mathematical name for quadrilateral $ABCD$.

Answer(a) [1]

(b) Measure the size of the acute angle.

Answer(b) [1]

(c) By taking suitable measurements from the diagram, work out the area of $ABCD$.

Answer(c) cm^2 [3]

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