

- 1 Put one pair of brackets into this equation to make it correct.

$$3 + 5 \times 4 - 2 = 13$$

[1]

2 $\mathbf{p} = \begin{pmatrix} 3 \\ -2 \end{pmatrix}$ $\mathbf{q} = \begin{pmatrix} -1 \\ 4 \end{pmatrix}$

Work out $\mathbf{p} + \mathbf{q}$.

Answer $\begin{pmatrix} \\ \end{pmatrix}$ [1]

- 3 Zingon make light bulbs.

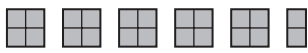
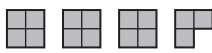
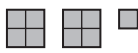
The probability that a Zingon light bulb is faulty is $\frac{1}{20}$.

Gina tests 240 of these light bulbs.

How many of them would she expect to be faulty?

Answer [1]

- 4 The pictogram shows information about the numbers of different drinks sold in a café in one hour.

Coffee	
Tea	
Hot chocolate	
Juice	

Key:  represents 4 cups

- (a) In this hour, 14 cups of hot chocolate were sold.
Complete the pictogram using this information. [1]
- (b) How many more cups of coffee than cups of tea were sold?

Answer(b) [1]

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

$$19\% \quad \frac{1}{5} \quad \sqrt{0.038} \quad \sin 11.4^\circ \quad 0.719^5$$

Answer < < < < [2]

6 Use a calculator to work out the following.

(a) $3(-4 \times 6^2 - 5)$

Answer(a) [1]

(b) $\sqrt{3} \times \tan 30^\circ + \sqrt{2} \times \sin 45^\circ$

Answer(b) [1]

7 Find the circumference of a circle of radius 2.5 cm.

Answer cm [2]

8 Bruce plays a game of golf.
His scores for each of the 18 holes are shown below.

2	3	4	5	4	6	2	3	4
4	5	3	4	3	5	4	4	4

The information is to be shown in a pie chart.

Calculate the sector angle for the score of 4.

Answer [2]

9 (a) Add **one** line to the diagram so that it has two lines of symmetry.



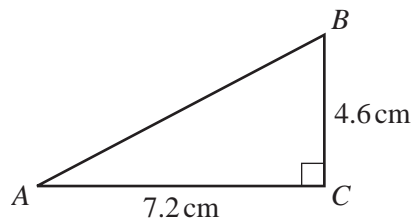
[1]

(b) Add **two** lines to the diagram so that it has rotational symmetry of order 2.



[1]

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Calculate AB .

Answer cm [2]

- 11 The table shows how the dollar to euro conversion rate changed during one day.

Time	1000	1100	1200	1300	1400	1500	1600
\$1	€1.3311	€1.3362	€1.3207	€1.3199	€1.3200	€1.3352	€1.3401

Khalil changed \$500 into euros (€).

How many more euros did Khalil receive if he changed his money at the highest rate compared to the lowest rate?

Answer €..... [3]

- 12 Pam wins the student of the year award in New Zealand.
She sends three photographs of the award ceremony by post to her relatives.

- one of size 13 cm by 23 cm to her uncle in Australia
- one of size 15 cm by 23 cm to her sister in China
- one of size 23 cm by 35 cm to her mother in the UK

Maximum lengths	Australia	Rest of the world
13 cm by 23.5 cm	\$1.90	\$2.50
15.5 cm by 23.5 cm	\$2.40	\$2.90
23 cm by 32.5 cm	\$2.80	\$3.40
26 cm by 38.5 cm	\$3.60	\$5.20

The cost of postage is shown in the table above.
Use this information to calculate the total cost.

Answer \$ [3]

- 13 (a) Complete the following statement.

The two common factors of 15 and 20 are 1 and [1]

- (b) Write down the next square number that is greater than 169.

Answer(b) [1]

- (c) Write down a prime number between 90 and 100.

Answer(c) [1]

- 14 The straight line, L , has the equation $y = 5 - 2x$.

Write down

- (a) the co-ordinates of the point where the line crosses the y-axis,

Answer(a) (.....,) [1]

- (b) the gradient of the line,

Answer(b) [1]

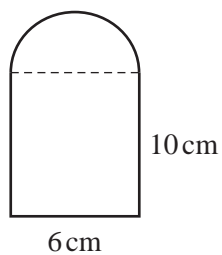
- (c) the equation of a line parallel to L .
Give your answer in the form $y = mx + c$.

Answer(c) $y =$ [1]

15 $c = 10d + 3$

(a) Find the value of c when $d = 2.3$.*Answer(a)* $c = \dots\dots\dots$ [1](b) Make d the subject of the formula.*Answer(b)* $d = \dots\dots\dots$ [2]

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This shape is made from a rectangle and a semicircle.
The rectangle measures 10 cm by 6 cm.

Work out the area of the shape.

Answer $\dots\dots\dots \text{cm}^2$ [3]

17 Solve the simultaneous equations.

$$2x + 5y = 26$$

$$4x + 3y = 24$$

Answer $x =$

$y =$ [3]

18 Simplify the following.

(a) $x^5 \times x^2$

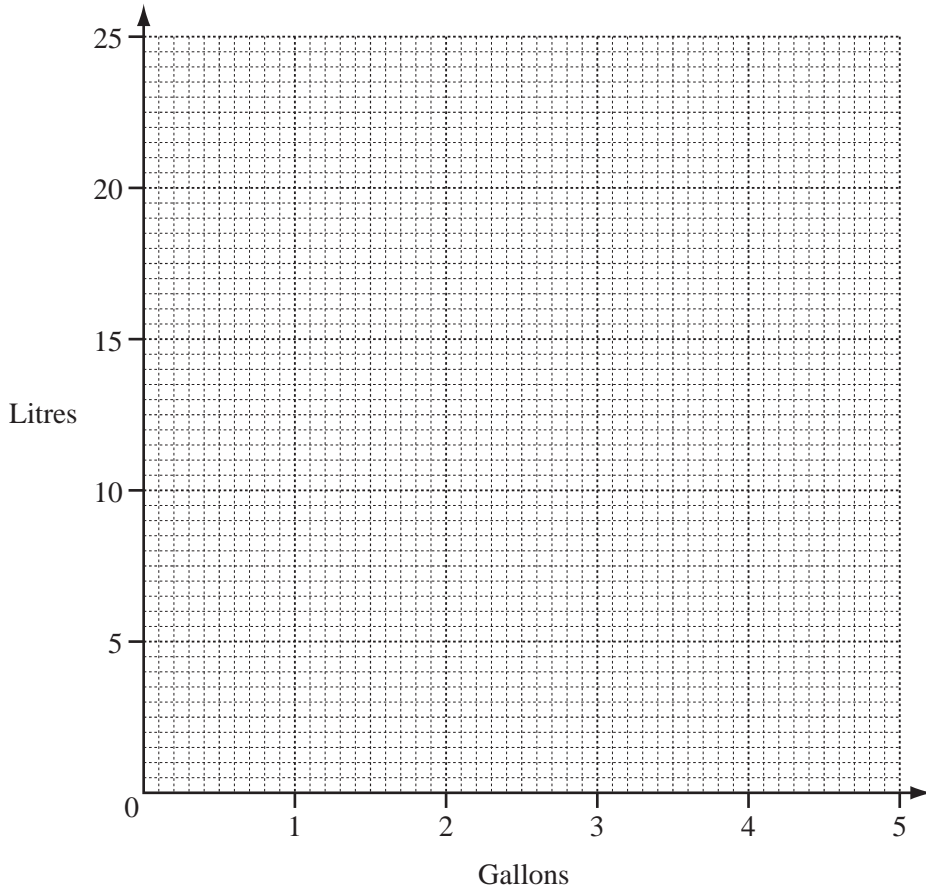
Answer(a) [1]

(b) $20y^4 \div 4y^{-2}$

Answer(b) [2]

19 Mario says that 5 gallons = 22.5 litres.

(a) On the grid, draw a straight line to show the conversion rate that Mario uses.



[2]

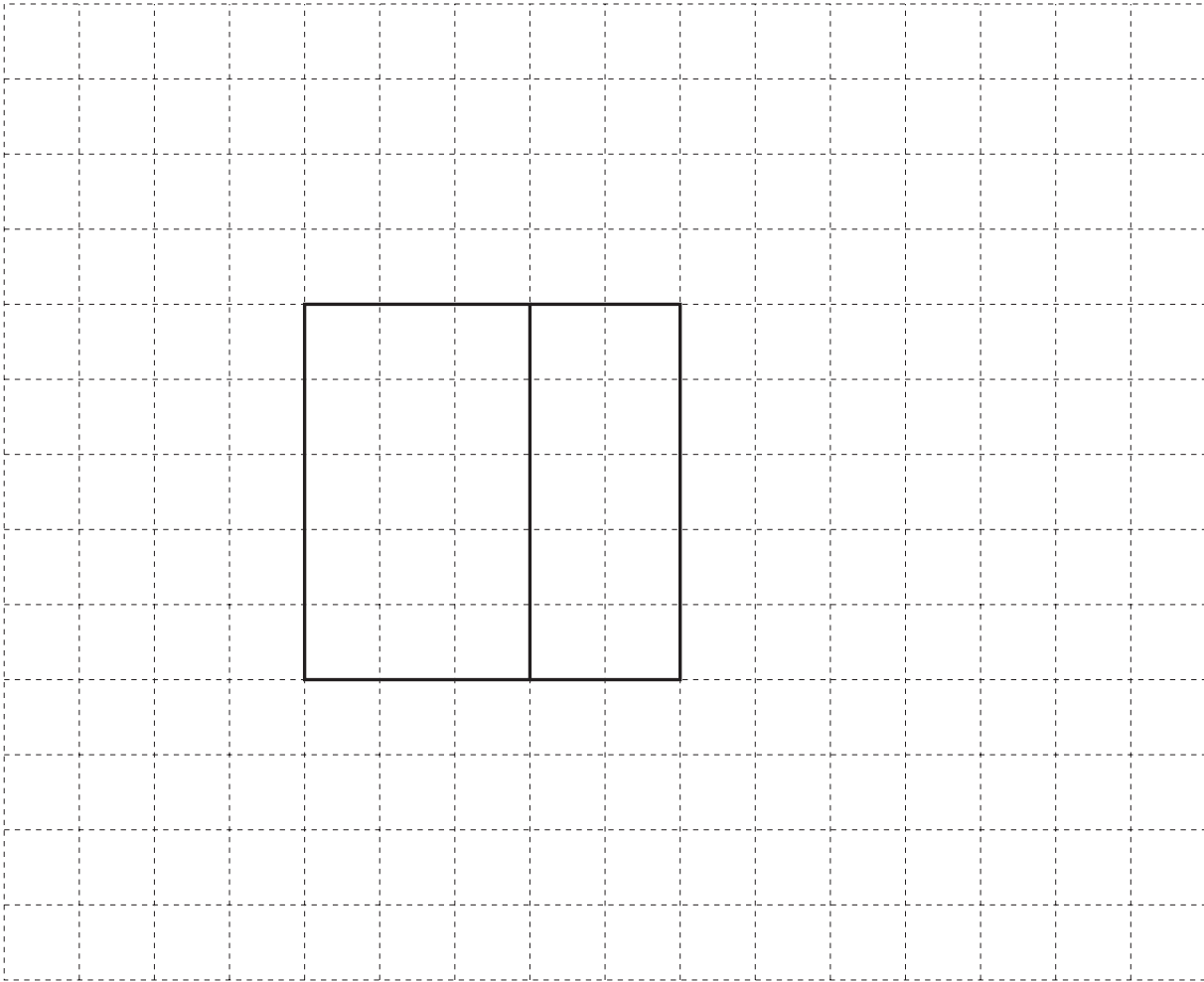
(b) Use your graph to find

(i) the number of litres equivalent to 4 gallons,

Answer(b)(i) litres [1]

(ii) the number of gallons equivalent to 15 litres.

Answer(b)(ii) gallons [1]



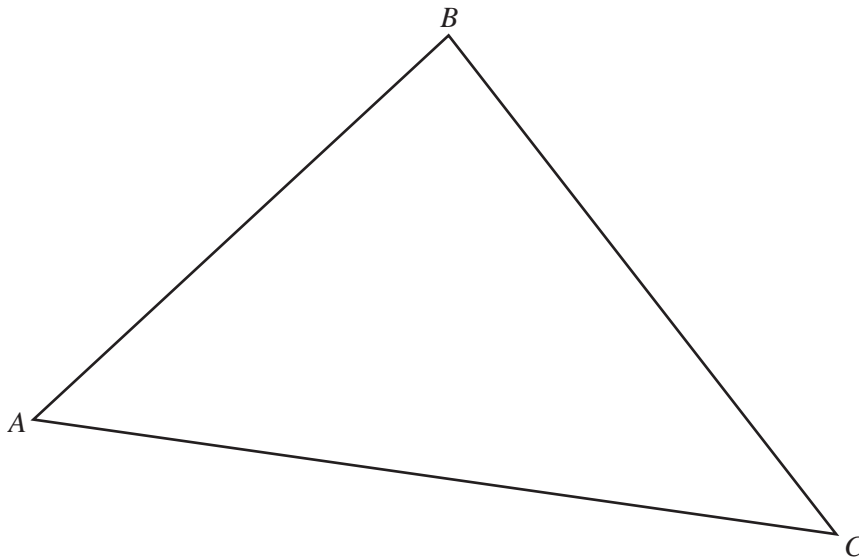
The diagram shows part of the net of a cuboid.
It is drawn full size.

- (a) Complete the net of the cuboid. [2]
- (b) Work out the volume of the cuboid.
Write down the units of your answer.

Answer(b) [3]

- 21 Use a straight edge and compasses only for the constructions in parts (a) and (b).
Leave in all your construction arcs.

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- (a) Construct the bisector of angle ABC . [2]
- (b) Construct the perpendicular bisector of AB . [2]
- (c) Shade the region inside triangle ABC containing points that are
- less than 7 cm from C
- and**
- closer to A than to B . [2]
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