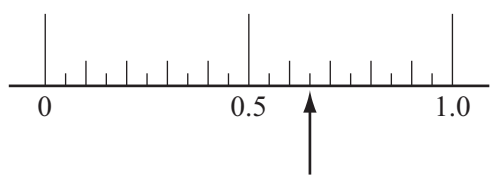


2

1



Write down the number the arrow points to on the scale.

Answer [1]

2

- 100 164 200 343 999**

Write down the cube number from this list.

Answer [1]

3 Write down the next prime number after 23.

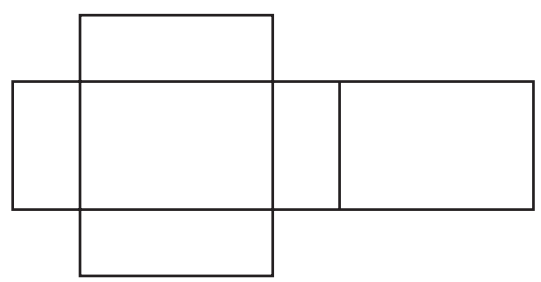
Answer [1]

4 Calculate the number of seconds in 3 hours.

Answer s [1]

3

5



The diagram shows the net of a solid.

Write down the mathematical name of this solid.

Answer [1]

6 Bryony asks her friends how many pets they have. She is going to use this table to record her results.

Number of pets	Frequency
0-1	
1-2	
2-3	
3 or more	

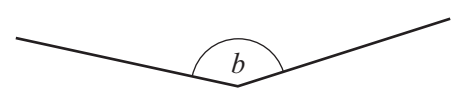
Explain what is wrong with this frequency table.

Answer [1]

7 (a) Draw an acute angle. Label the acute angle with the letter *a*.

[1]

(b) Write down the mathematical name of angle *b*.



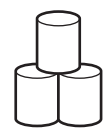
Answer(b) [1]

4

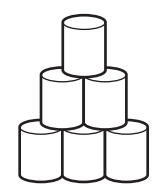
8



1 row



2 rows



3 rows

Complete the table for 4 rows and 5 rows.

Number of rows	1	2	3	4	5
Number of cans	1	3	6		

[2]

- 9 The probability that the school hockey team will win its next match is 0.45 .
The probability that it will lose its next match is 0.3 .

Work out the probability that the school hockey team will draw its next match.

Answer [2]

10

$$\mathbf{a} = \begin{pmatrix} 4 \\ 7 \end{pmatrix} \quad \mathbf{b} = \begin{pmatrix} -5 \\ 2 \end{pmatrix}$$

Write each of the following as a single vector.

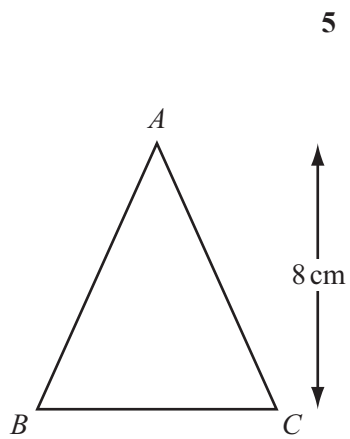
(a) $6\mathbf{a}$

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

(b) $\mathbf{a} + \mathbf{b}$

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

11



NOT TO SCALE

Triangle *ABC* has a height of 8 cm and an area of 42 cm².

Calculate the length of *BC*.

Answer BC = cm [2]

12 (a) Use your calculator to work out $\sqrt{65} - 1.7^2$.

Write down all the numbers displayed on your calculator.

Answer(a) [1]

(b) Write your answer to **part (a)** correct to 2 significant figures.

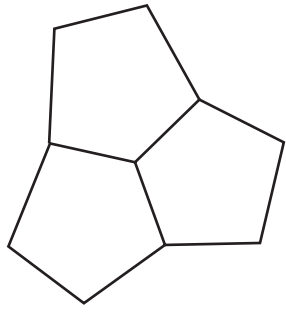
Answer(b) [1]

13 The exterior angle of a regular pentagon is 72° .

(a) Write down the interior angle of a regular pentagon.

Answer(a) [1]

(b)



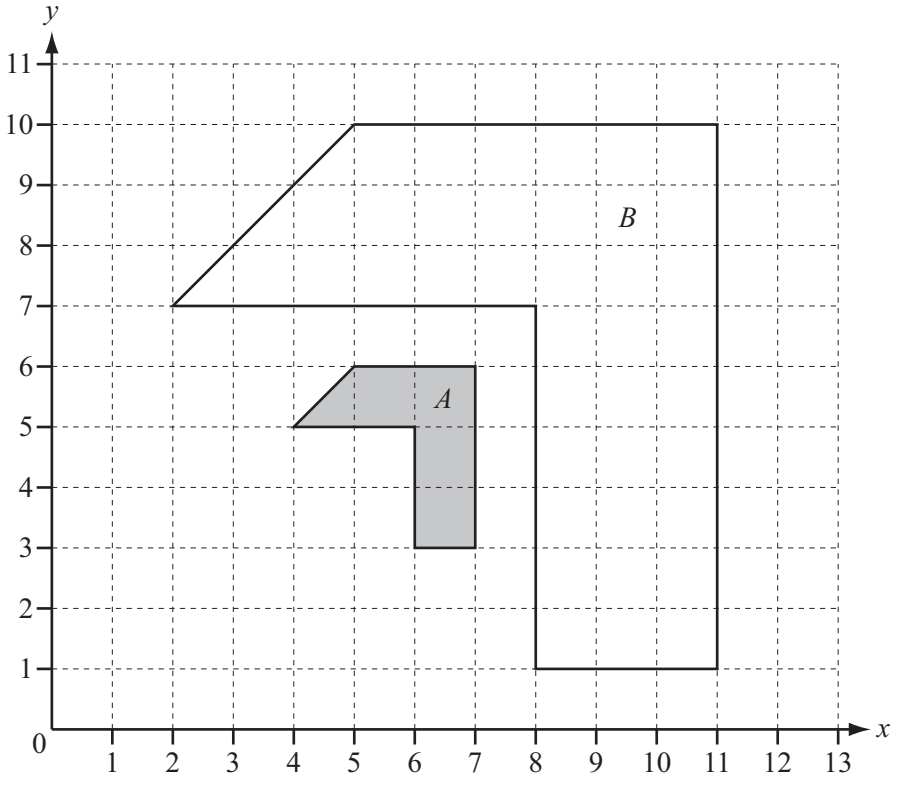
The diagram shows three pentagons which fit together.
Uta thinks that three **regular** pentagons will fit together in the same way.

Explain how you know she is wrong.

Answer(b)

..... [1]

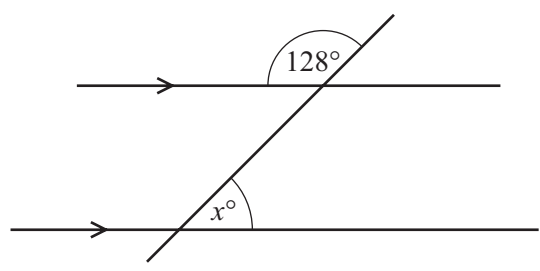
14



Describe fully the **single** transformation that maps shape A onto shape B.

Answer [3]

15 (a)



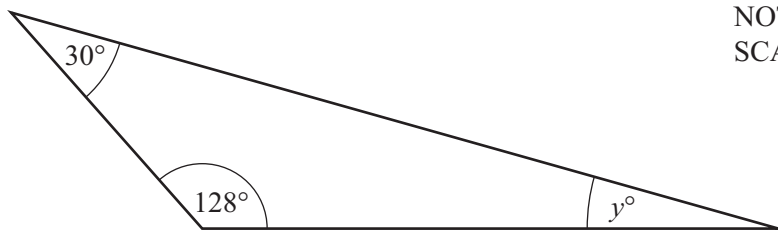
NOT TO
SCALE

A straight line intersects two parallel lines as shown.

Find the value of x .

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

(b)



NOT TO
SCALE

Calculate the value of y .

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

16 (a) The average distance of the Moon from the Earth is 384 400 km.

Write this distance in standard form.

Answer(a) $\dots\dots\dots$ km [1]

(b) Calculate $(4.3 \times 10^8) + (2.5 \times 10^7)$.

Give your answer in standard form.

Answer(b) $\dots\dots\dots$ [2]

8

17

= < >

Write one of the three symbols between each pair of numbers.

Each symbol can be used more than once.

(a) 30% $\frac{1}{3}$ [1]

(b) -2 -3 [1]

(c) π $\sqrt{10}$ [1]

18 (a)

- 3 -4 -7 2 5

Choose three different numbers from the list to complete this calculation.

..... + + = -6 [1]

(b) Find the value of $5x - 3y$ when $x = -2$ and $y = 4$.

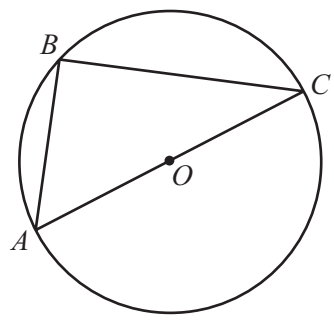
Answer(b) [2]

19 Without using a calculator, work out $\frac{6}{7} \div 1\frac{2}{3}$.

Write down all the steps in your working.

Answer [3]

20



NOT TO
SCALE

A , B and C are points on the circumference of a circle centre O .
 AC is a straight line.

(a) Explain why angle ABC is 90° .

Answer(a) [1]

(b) The **diameter** of the circle is 3 cm.

Calculate the area of this circle.

Answer(b) cm^2 [2]

21 Carol invests \$6250 at a rate of 2% per year compound interest.
Calculate the **total** amount Carol has after 3 years.

Answer \$ [3]

22 Solve the equation.
 $5(2y - 17) = 60$

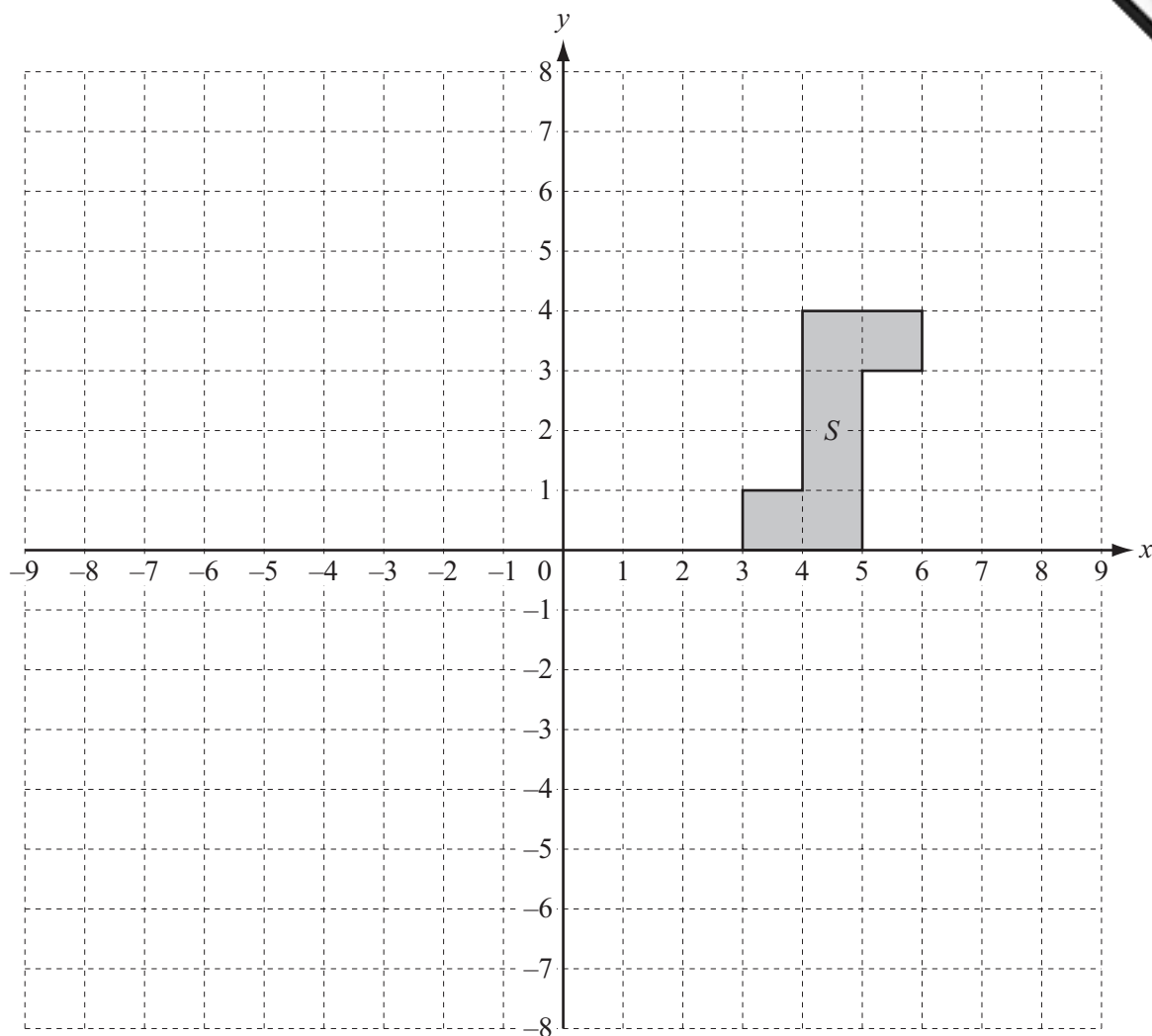
Answer $y =$ [3]

23 (a) Simplify y^0 .

Answer(a) [1]

(b) Make v the subject of $E = \frac{1}{2}mv^2$.

Answer(b) $v =$ [3]



(a) On the grid

(i) plot the point $(-5, -2)$ and label it P , [1]

(ii) draw the line $y = 2x$. [1]

(b) (i) Write down the order of rotational symmetry of shape S .

Answer(b)(i) [1]

(ii) Draw the image of shape S after a rotation through 90° clockwise about $(0, 0)$. [2]

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