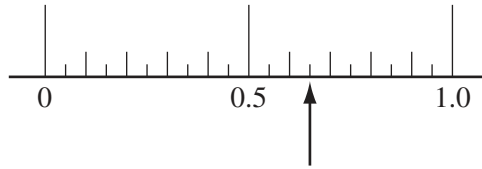




1



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]

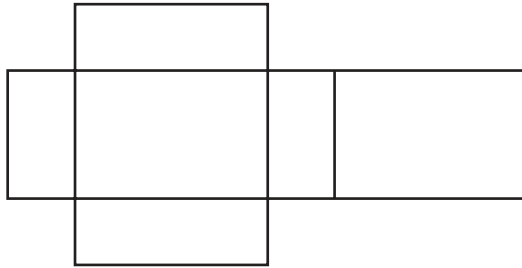
---

4 Calculate the number of seconds in 3 hours.

Answer ..... s [1]

---

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	

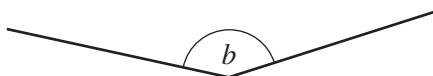
Explain what is wrong with this frequency table.

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*.

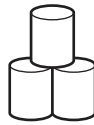


Answer(b) ..... [1]

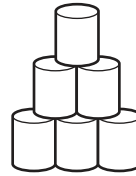
8



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.

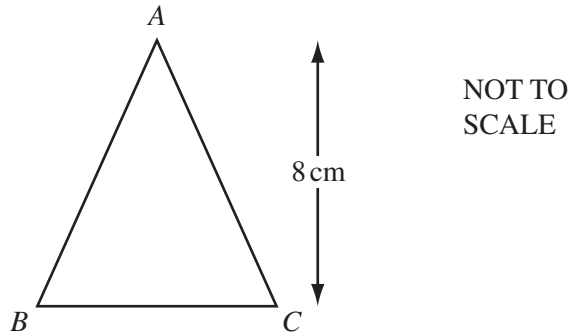
(a)  $6\mathbf{a}$

Answer(a)  $\left( \quad \right)$  [1]

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

Answer(b)  $\left( \quad \right)$  [1]

11



Triangle  $ABC$  has a height of 8 cm and an area of  $42 \text{ cm}^2$ .

Calculate the length of  $BC$ .

*Answer*  $BC = \dots\dots\dots$  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)*  $\dots\dots\dots$  [1]

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

*Answer(b)*  $\dots\dots\dots$  [1]

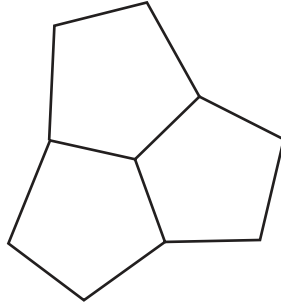
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13 The exterior angle of a regular pentagon is  $72^\circ$ .

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

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

(b)



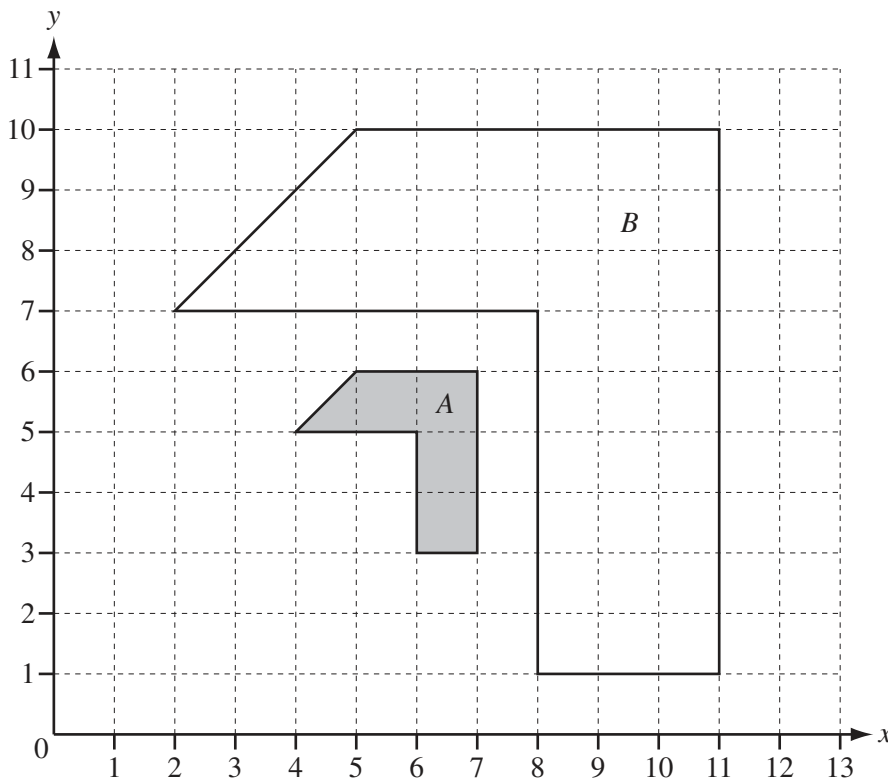
The diagram shows three pentagons which fit together.  
Uta thinks that three **regular** pentagons will fit together in the same way.

Explain how you know she is wrong.

Answer(b) .....

..... [1]

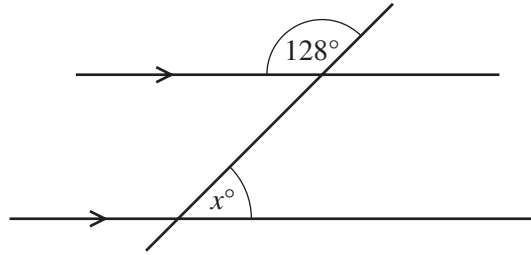
14



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

Answer ..... [3]

15 (a)

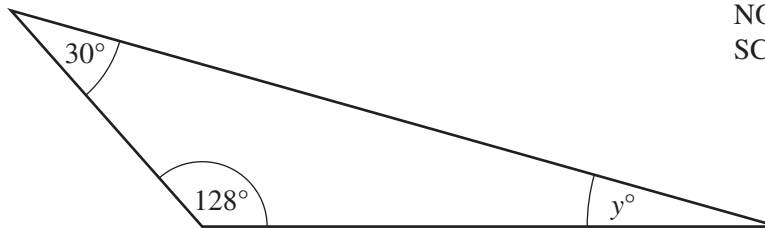
NOT TO  
SCALE

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]

17

= &lt; &gt;

For  
Examiner's  
Use

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)  $\pi$  .....  $\sqrt{10}$  [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]

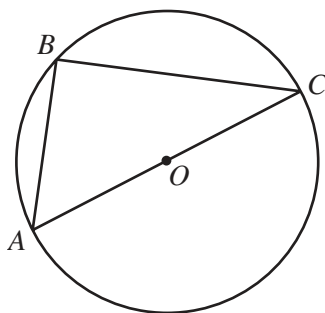


19 Without using a calculator, work out  $\frac{6}{7} \div 1\frac{2}{3}$ .

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  $90^\circ$ .

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

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

Calculate the area of this circle.

Answer(b) .....  $\text{cm}^2$  [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]

---

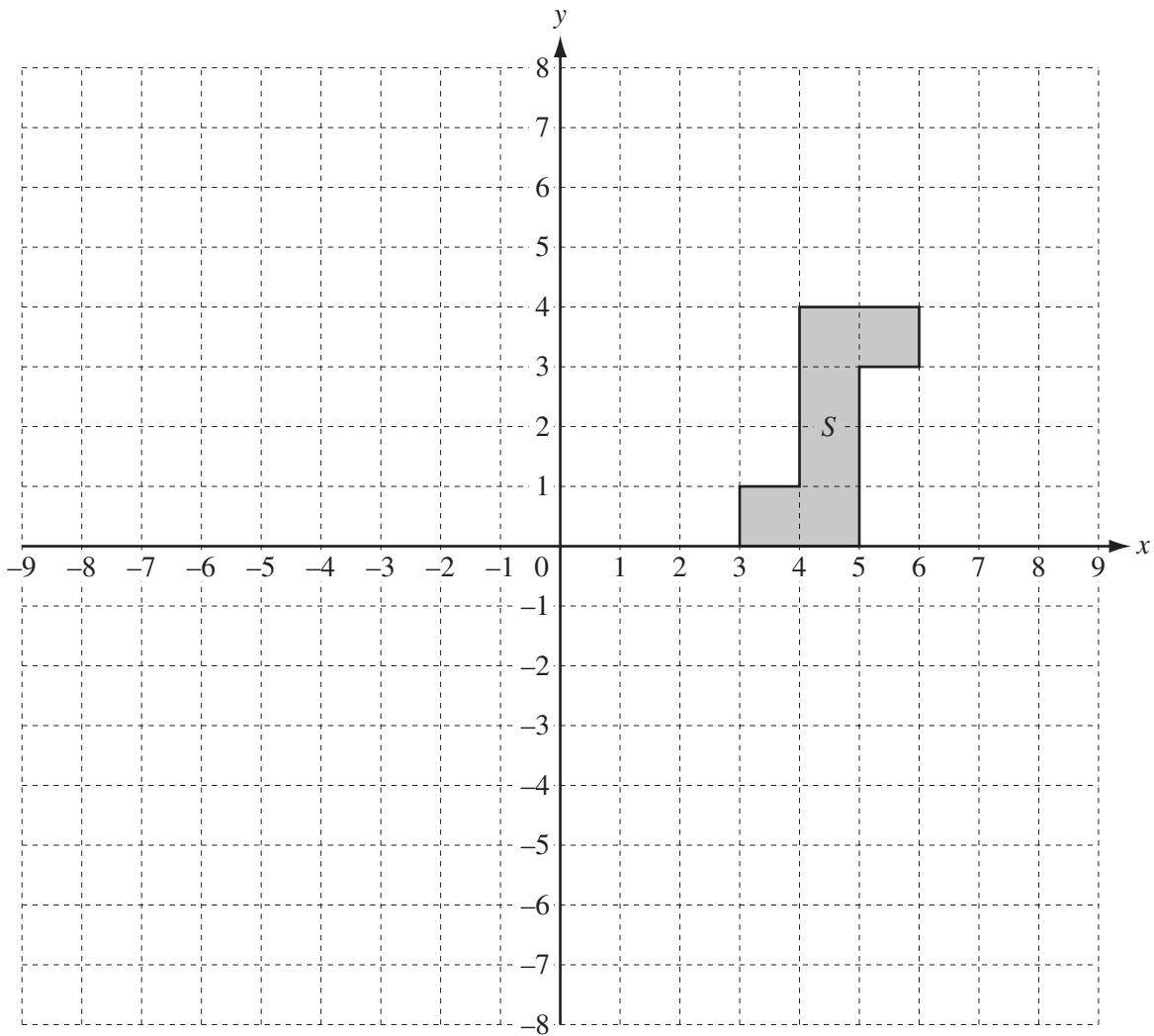
- 23 (a) Simplify  $y^0$ .

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  $90^\circ$  clockwise about  $(0, 0)$ . [2]

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