

# Shape 1

Calculator allowed for all questions

MATHSWATCH

Foundation



Higher



All questions

Time 45 minutes

Name: \_\_\_\_\_

	<i>Grade</i>	<i>Title of clip</i>	<i>Marks</i>	<i>Score</i>	<i>Percentage</i>
Clip 118	C	Pythagoras (qu. 1, 2, 3)	9	_____	_____
Clip 119	C	Pythagoras on a graph (qu. 4)	3	_____	_____
Clip 120	C	3-D coordinates (qu. 5)	4	_____	_____
Clip 121	C	Surface area of cuboids (qu. 6)	4	_____	_____
Clip 122	C	Volume of prisms (qu. 7)	3	_____	_____
Clip 123	C	Similar shapes (qu. 8)	4	_____	_____
Clip 124	C	Dimensions (qu. 9)	7	_____	_____
Clip 125	C	Bounds (qu. 10)	4	_____	_____
Clip 126	C	Compound measures (qu. 11)	3	_____	_____
Clip 127	C	Bisecting a line (qu. 12)	3	_____	_____
Clip 128	C	Drawing a perpendicular (qu. 13)	3	_____	_____
Clip 129	C	Bisecting an angle (qu. 14)	3	_____	_____
Clip 130	C	Loci (qu. 15)	3	_____	_____
Clip 131	C	Bearings (qu. 16)	5	_____	_____

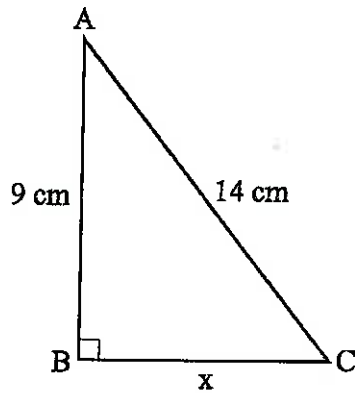
Out of 58

TOTAL  
SCORE \_\_\_\_\_

FINAL  
PERCENTAGE

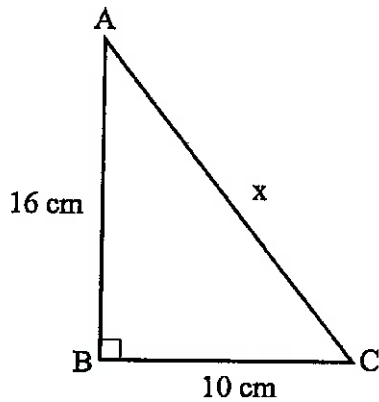
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- 1) Find the length of side BC.  
Give your answer correct to one decimal place.



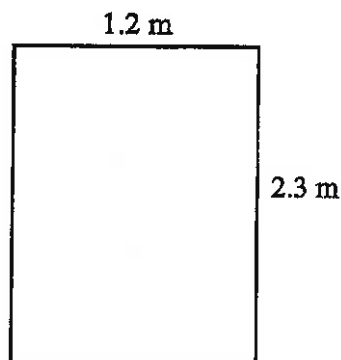
BC = \_\_\_\_\_ cm    3

- 2) Find the length of side AC.  
Give your answer correct to one decimal place.



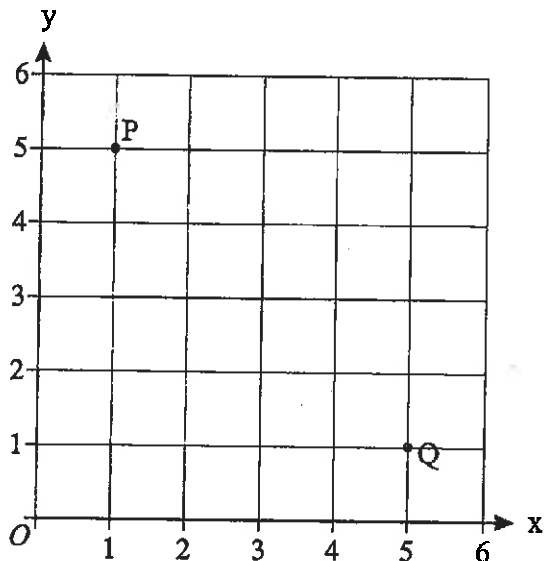
BC = \_\_\_\_\_ cm    3

- 3) In the rectangular doorway, find the length of the diagonal.  
Give your answer correct to one decimal place.



The diagonal is \_\_\_\_\_ m    3

- 4) Points P and Q are on a centimetre grid as shown. Find the distance PQ, giving your answer correct to one decimal place.



Distance PQ = \_\_\_\_\_ 3

- 5) A cuboid lies on the coordinate axes as shown. Point P has coordinates (6, 3, 4).

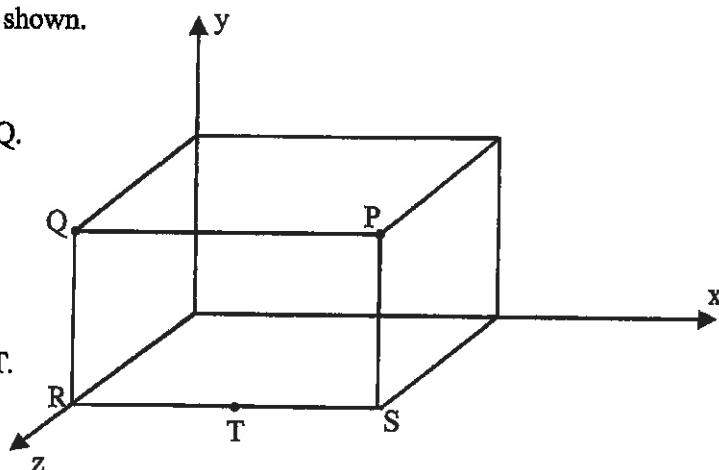
a) Write down the coordinates of point Q.

(\_\_\_\_, \_\_\_\_, \_\_\_\_) 2

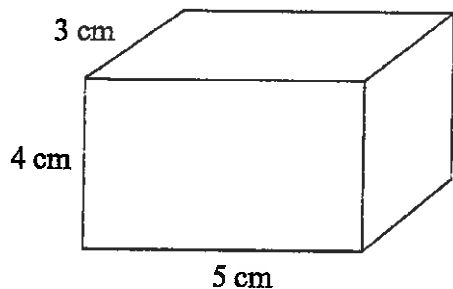
Point T lies half way along RS.

b) Write down the coordinates of point T.

(\_\_\_\_, \_\_\_\_, \_\_\_\_) 2



- 6) A cuboid has sides of length 5 cm, 3 cm and 4 cm. Find the surface area of the cuboid.



Surface area = \_\_\_\_\_ cm<sup>2</sup> 4

# Shape 2

Calculator allowed for all questions

Foundation

Higher



All questions

Time for this test, 60 minutes

Use the  $\pi$  button or take  $\pi$  to be 3.142

Name: \_\_\_\_\_

	<i>Grade</i>	<i>Title of clip</i>	<i>Marks</i>	<i>Score</i>	<i>Percentage</i>
Clip 67	D	Alternate angles (qu. 1)	2	_____	_____
Clip 68/69	D	Angle sum of triangle (qu. 2)	3	_____	_____
Clip 70	D	Angles of polygons (qu. 3)	8	_____	_____
Clip 150	B	Circle theorems (qu. 4, 5)	8	_____	_____
Clip 71	D	Area of circle (qu. 6)	7	_____	_____
Clip 72	D	Circumference of circle (qu. 7, 8)	7	_____	_____
Clip 73	D	Area of compound shape (qu. 9)	6	_____	_____
Clip 74	D	Rotations (qu. 10)	5	_____	_____
Clip 75	D	Reflections (qu. 11)	4	_____	_____
Clip 76	D	Enlargements (qu. 12, 13)	5	_____	_____
Clip 171	A*/A	Enlargement with neg. SF (qu. 14)	3	_____	_____
Clip 77	D	Translations (qu. 15)	7	_____	_____
Clip 78	D	Mid-point of line (qu. 16, 17)	4	_____	_____
Clip 79	D	Angles (qu. 18, 19)	6	_____	_____
Clip 80	D	Drawing triangles (qu. 20)	3	_____	_____
Clip 81	D	Plans & elevations (qu. 21)	4	_____	_____
Clip 82	D	Nets (qu. 22)	3	_____	_____
Clip 83	D	Symmetries (qu. 23)	4	_____	_____
Clip 147	B	Trigonometry (qu. 24 to 27)	12	_____	_____
Clip 148	B	Bearings and trig (qu. 28)	3	_____	_____
Clip 149	B	Similar shapes (qu. 29, 30)	8	_____	_____

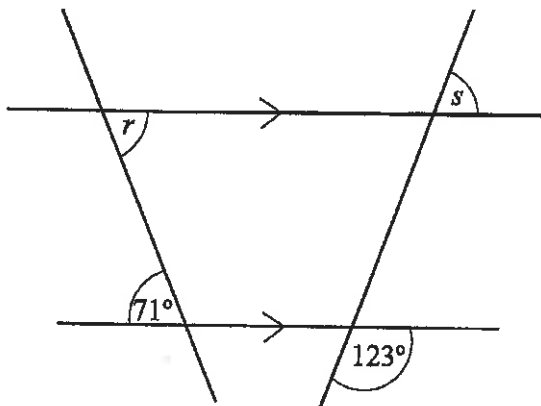
Out of 112

TOTAL  
SCORE \_\_\_\_\_

FINAL  
PERCENTAGE

%

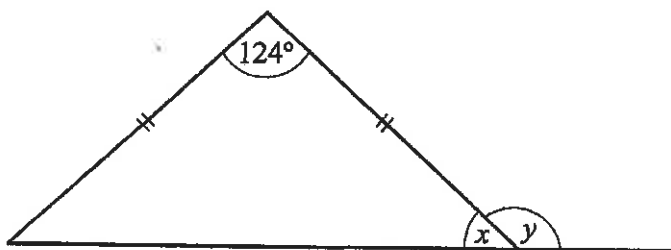
1) Work out the size of angles  $r$  and  $s$ .



$r =$  \_\_\_\_\_ 1

$s =$  \_\_\_\_\_ 1

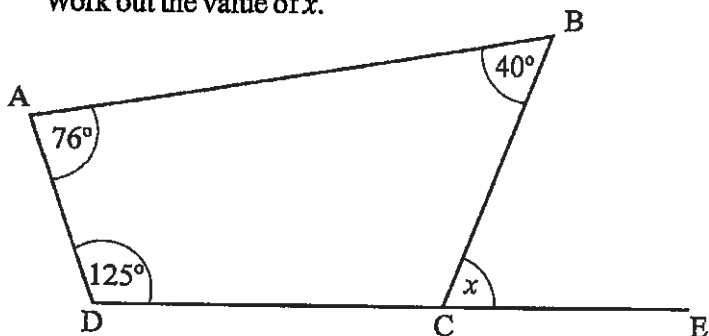
2) Work out the values of  $x$  and  $y$ .



$x =$  \_\_\_\_\_ 2

$y =$  \_\_\_\_\_ 1

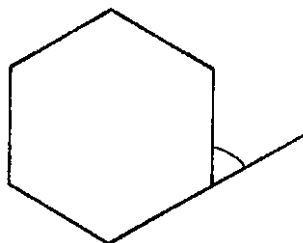
3) a) ABCD is a quadrilateral. The side DC is extended to E. Work out the value of  $x$ .



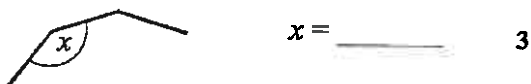
$x =$  \_\_\_\_\_ 3

b) Calculate the size of an exterior angle of a regular hexagon.

Size of exterior angle is \_\_\_\_\_ 2



c) The diagram shows part of a regular 10-sided polygon. Work out the size of the angle marked  $x$ .

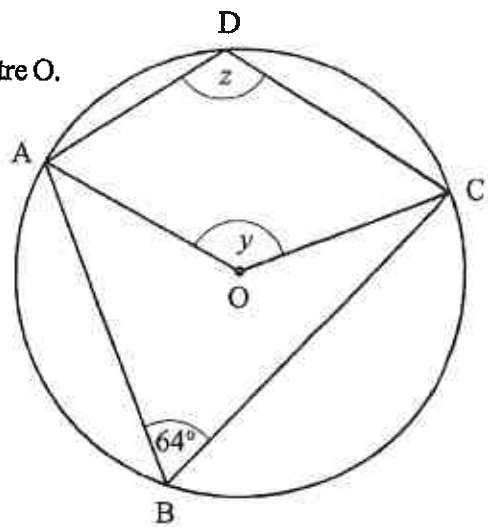


$x =$  \_\_\_\_\_ 3

- 4) A, B, C and D are four points on the circumference of a circle, centre O.  
Angle ABC =  $64^\circ$

(a) Work out the size of angle y. \_\_\_\_\_ 2

(b) Work out the size of angle z. \_\_\_\_\_ 2

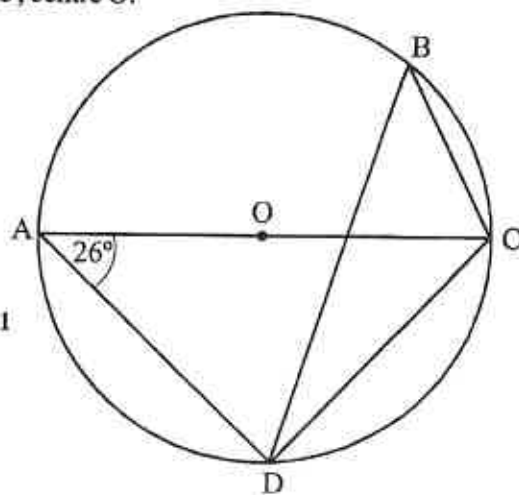


- 5) A, B, C and D are four points on the circumference of a circle, centre O.  
AC is a diameter of the circle.

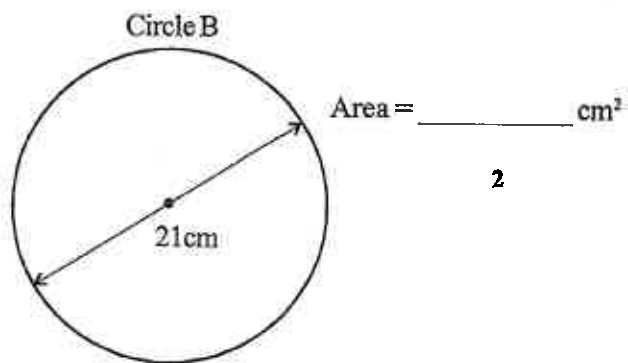
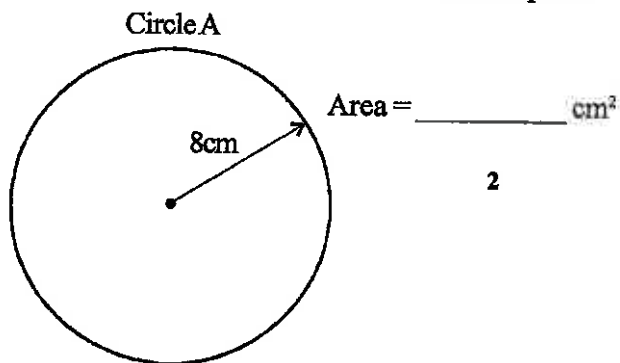
(a) Find the size of angle ACD. \_\_\_\_\_ 2

(b) Find the size of angle DBC. \_\_\_\_\_ 1  
Give a reason for your answer.

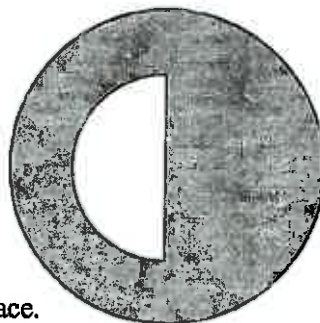
\_\_\_\_\_ 1



- 6) a) Find the area of Circle A and Circle B.  
Give your answers correct to 1 decimal place.

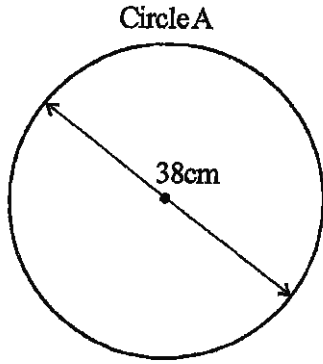


- b) A semi-circle is cut from a circle.  
The circle has a diameter of 34cm.  
The semi-circle has a diameter of 22cm.  
Calculate the shaded area.  
Give your answer correct to 1 decimal place.

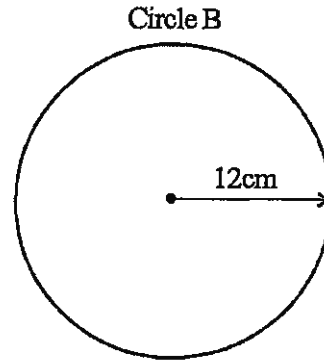


Shaded area = \_\_\_\_\_  $\text{cm}^2$

- 7) Find the circumference of Circle A and Circle B.  
Give your answers correct to 1 decimal place.



Circumference = \_\_\_\_\_ cm      2

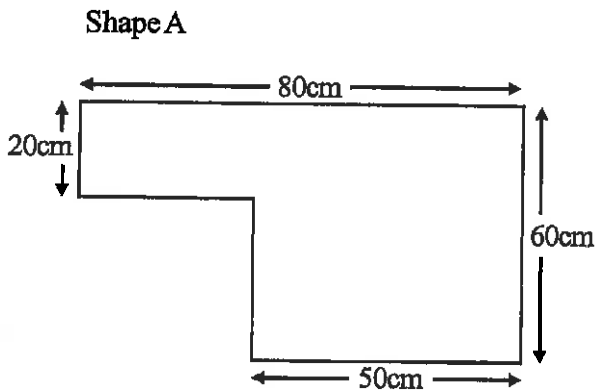


Circumference = \_\_\_\_\_ cm      2

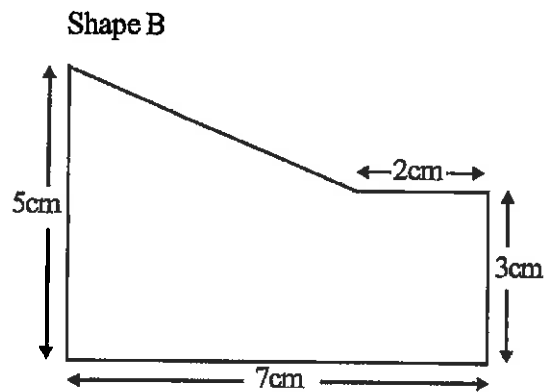
- 8) The wheels of a bicycle each have a diameter of 70cm.  
If the bicycle travels a distance of 100m, how many times does each wheel rotate?  
Give your answer to the nearest whole number.

\_\_\_\_\_      3

- 9) Find the area of Shape A and Shape B.



Area = \_\_\_\_\_ cm<sup>2</sup>      3



Area = \_\_\_\_\_ cm<sup>2</sup>      3

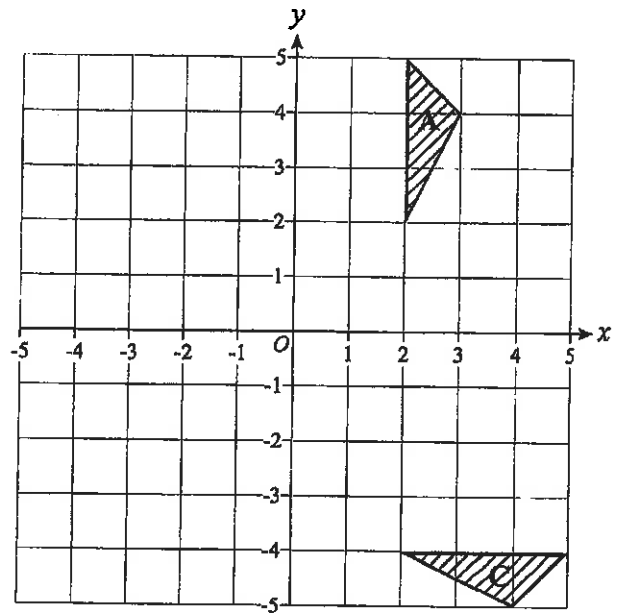
- 10) a) Rotate shape A  $90^\circ$  anticlockwise about  $(0, 0)$ .  
Label this new shape with the letter B. 2

- b) Describe fully the single transformation which takes shape A to shape C.

\_\_\_\_\_

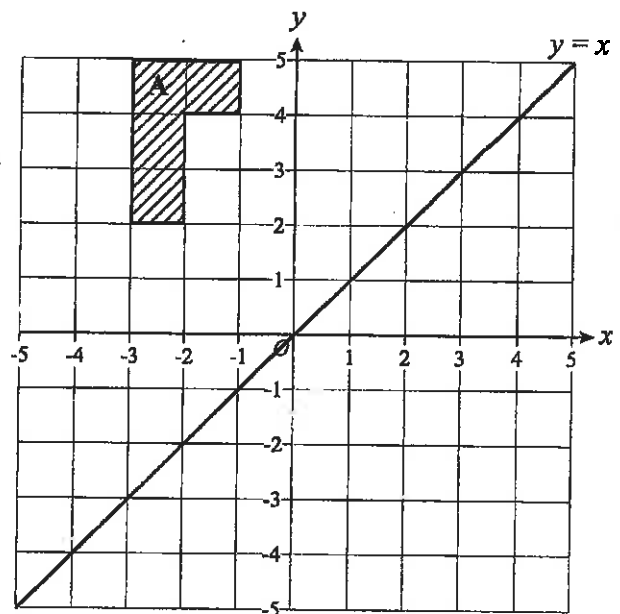
\_\_\_\_\_

\_\_\_\_\_ 3

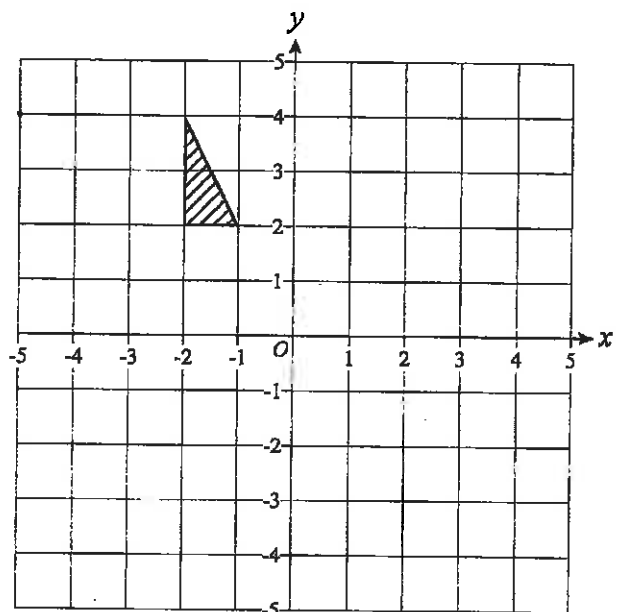


- 11) a) Reflect shape A in the  $x$ -axis and label it B. 2

- b) Reflect shape A in the line  $y = x$  and label it C. 2

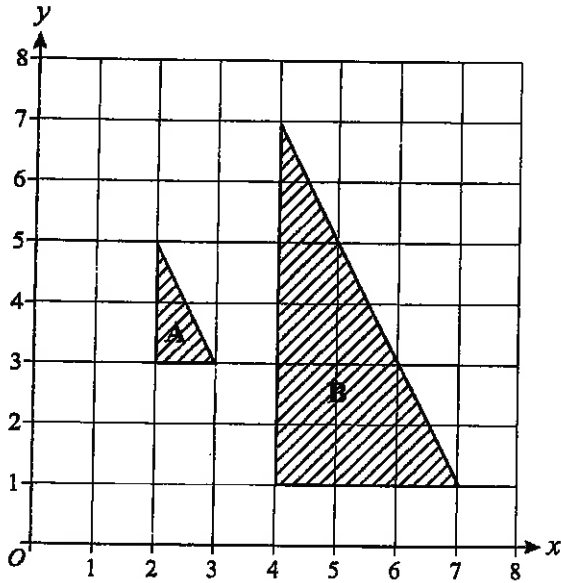


- 12) Enlarge the shaded triangle by scale factor 2 using point  $(-5, 4)$  as the centre of enlargement. 2





- 13) Describe fully the single transformation which maps shape A onto shape B.




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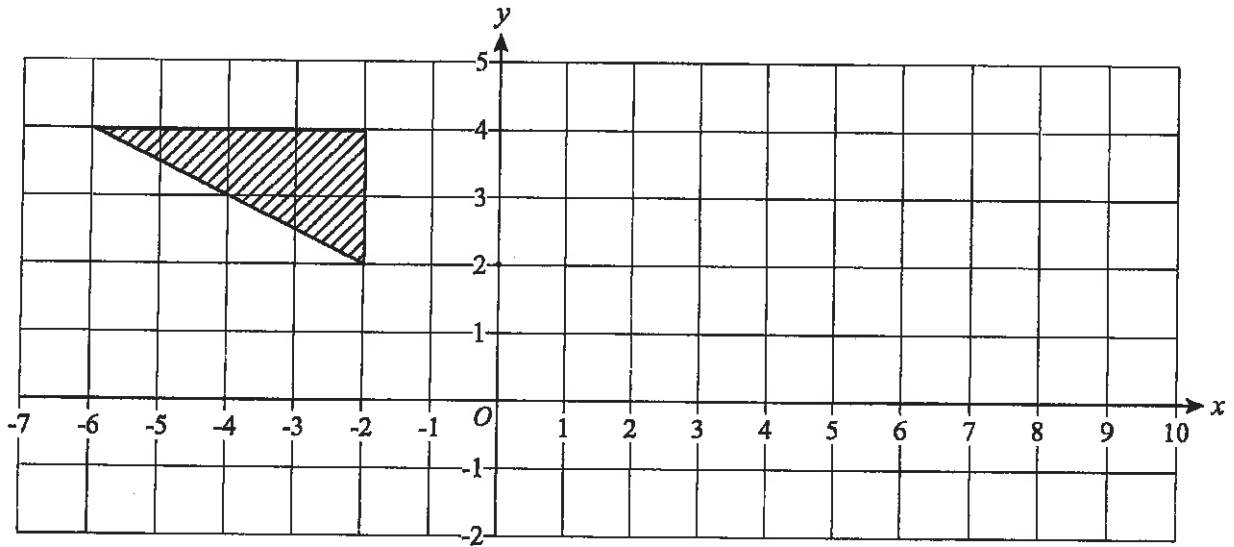
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3

- 14) Enlarge the shaded triangle by scale factor  $-1\frac{1}{2}$  with point  $(0, 2)$  as the centre of enlargement. 3

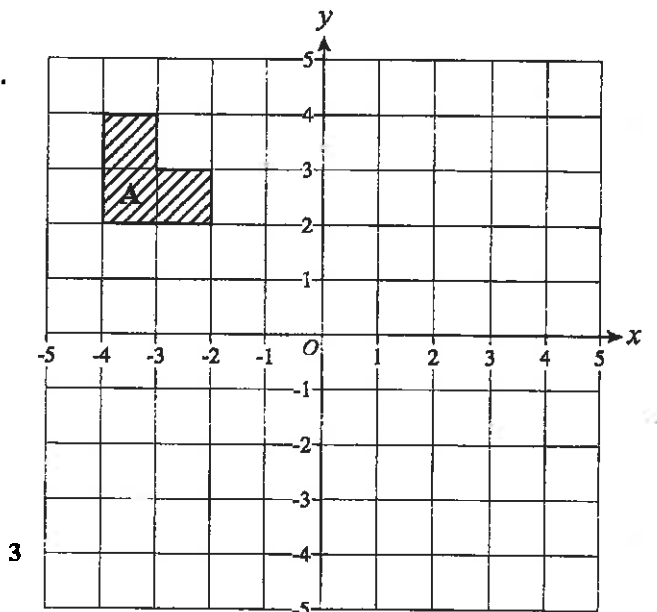


- 15) a) Translate shape A by vector  $\begin{bmatrix} 7 \\ -5 \end{bmatrix}$  and label it B. 2
- b) Translate shape B by vector  $\begin{bmatrix} -6 \\ -1 \end{bmatrix}$  Label this new shape C. 2
- c) Describe fully the single transformation which will take shape A to shape C.

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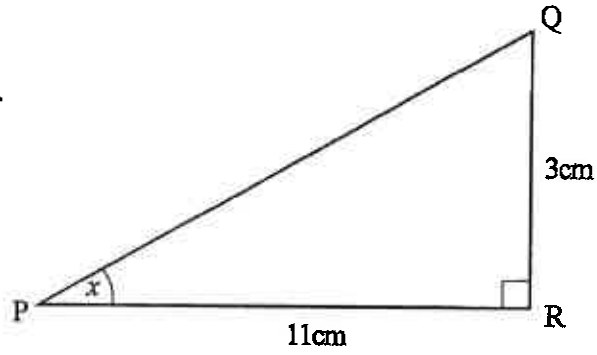
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3

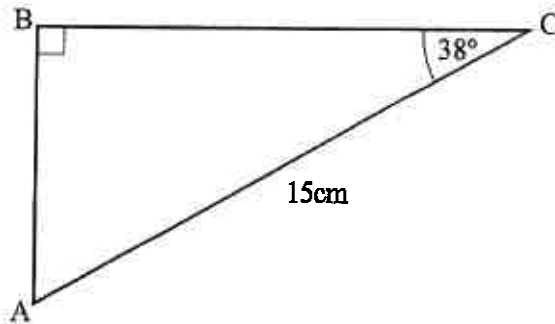
- 24) Work out the size of angle RPQ.  
Give your answer to 1 decimal place.

\_\_\_\_\_ 3



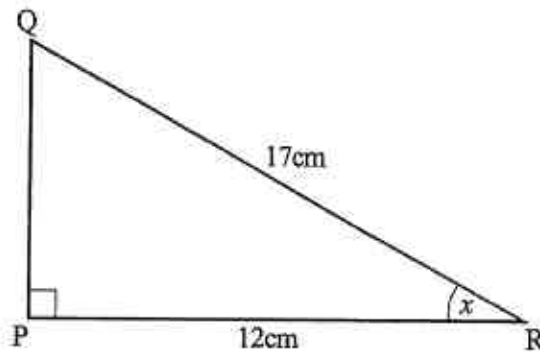
- 25) Work out the size of side BC.  
Give your answer to 1 decimal place.

\_\_\_\_\_ 3



- 26) Work out the size of angle PRQ.  
Give your answer to 1 decimal place.

\_\_\_\_\_ 3



- 27) Work out the size of side XZ.  
Give your answer to 1 decimal place.

\_\_\_\_\_ 3

