Geometry 3H Assessment

Higher Level

All questions

Clip	Grade	Title of clip	Question(s)	Marked out of	Score	%
173	5	Exact Trigonometric Values	1 - 2	6	___	___
174	5	Introduction to Vectors	3 - 4	6	___	___
181	6	Enlargement - Negative Scale Factor	5 - 6	6	___	___
182	6	Combinations of Transformations	7	3	___	___
183	6	Circle Theorems	8 - 11	10	___	___
184	6	Proof of Circle Theorems	12	3	___	___
200	7	Similarity - Area and Volume	13 - 14	6	___	___

Out of 40

TOTAL SCORE _____
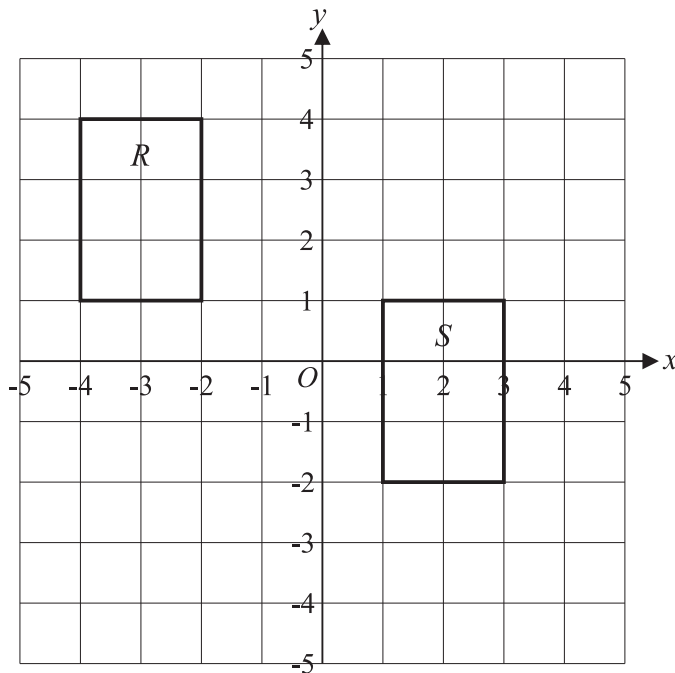
Final Percentage [   ] %

1) Circle the exact value of

a) Cos 30° $\dfrac{1}{\sqrt{3}}$ $\dfrac{1}{2}$ $\dfrac{\sqrt{3}}{2}$ $\dfrac{2}{\sqrt{3}}$ **1**

b) Sin 30° $\dfrac{1}{2}$ 1 $\dfrac{\sqrt{3}}{2}$ $\dfrac{\sqrt{2}}{2}$ **1**

c) Tan 45°   0 $\dfrac{1}{\sqrt{3}}$ $\sqrt{3}$ 1   **1**

2) What is the exact value of Sin 0° + Cos 0°?   _____   **3**
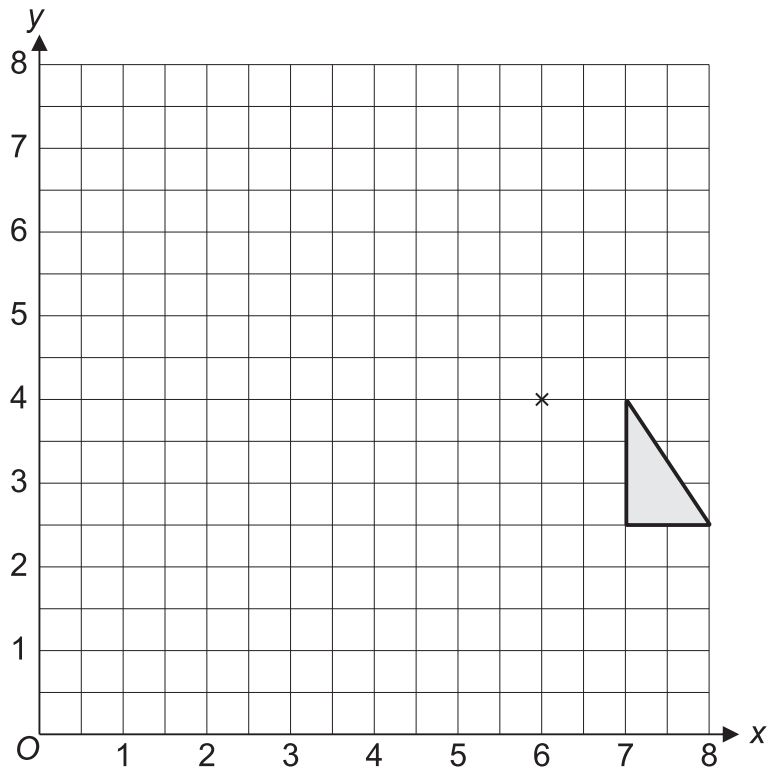

3)

What is the vector that translates shape *R* to shape *S* ?   _____   **3**

4) Here are two column vectors
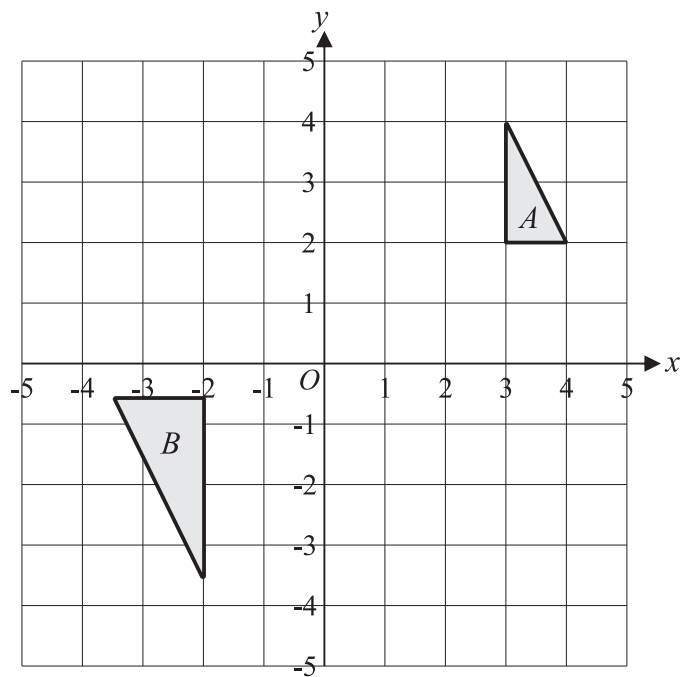
$$\mathbf{f} = \begin{bmatrix} 3 \\ 5 \end{bmatrix} \qquad \mathbf{g} = \begin{bmatrix} 4 \\ -2 \end{bmatrix}$$

Work out 4**f** – 2**g**   _____   **3**

5) Enlarge the triangle by scale factor –2 with centre (6, 4). **3**
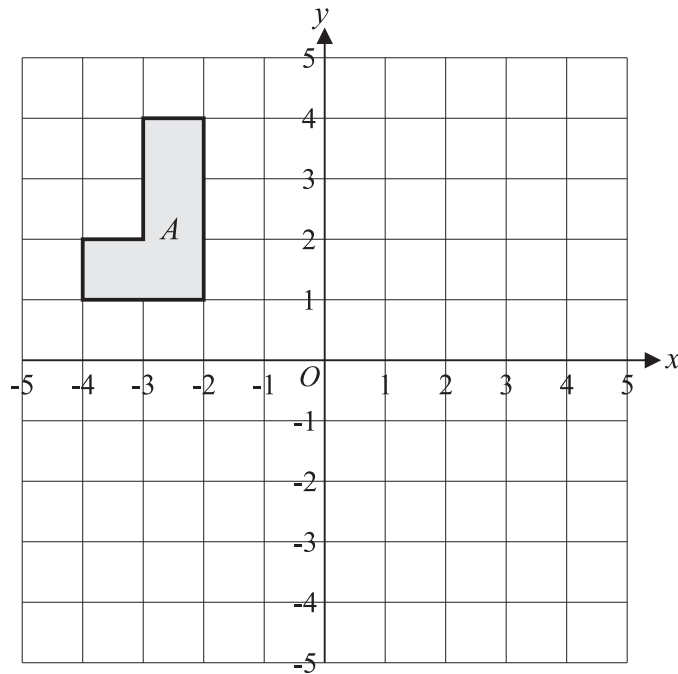

6)

Describe fully the single transformation that maps triangle *A* onto triangle *B*.
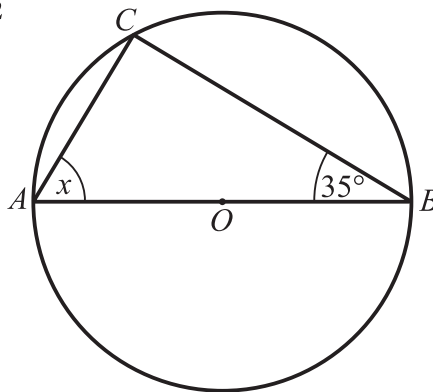
_____   **3**

7)

Shape *A* is reflected in the *y*-axis and then its image is rotated 180° about the origin to give shape *B*.

Describe fully the single transformation that maps *A* to *B* _____ **3**

8) *A*, *B* and *C* are points on the circumference of a circle with centre *O*.

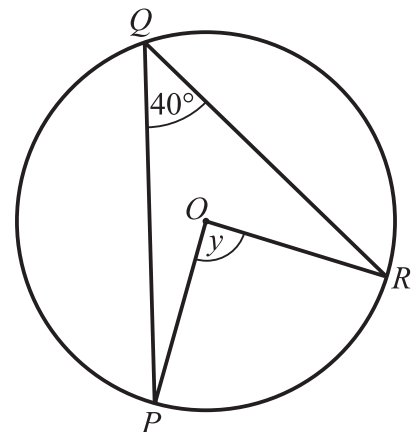Work out the size of angle *x* _____ **2**

9) *P*, *Q* and *R* are points on the circumference of a circle with centre *O*.

Work out the size of angle *y*.

Give a reason for your answer.
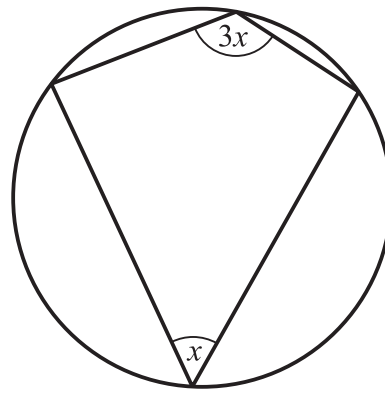
Answer _____ **1**

Reason _____ **1**

_____

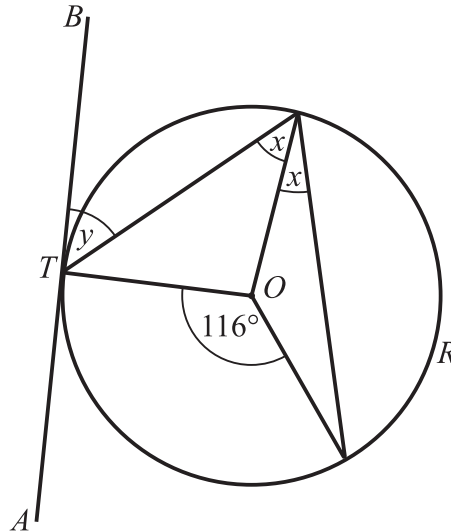10) The diagram shows a cyclic quadrilateral.

Work out the value of x _____ **2**
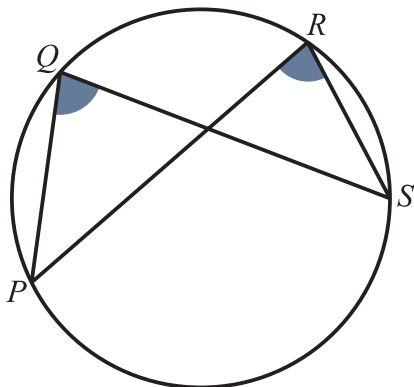
11) The diagram shows a circle centre O.

ATB is a tangent at T.

a) Work out the value of x _____ **2**

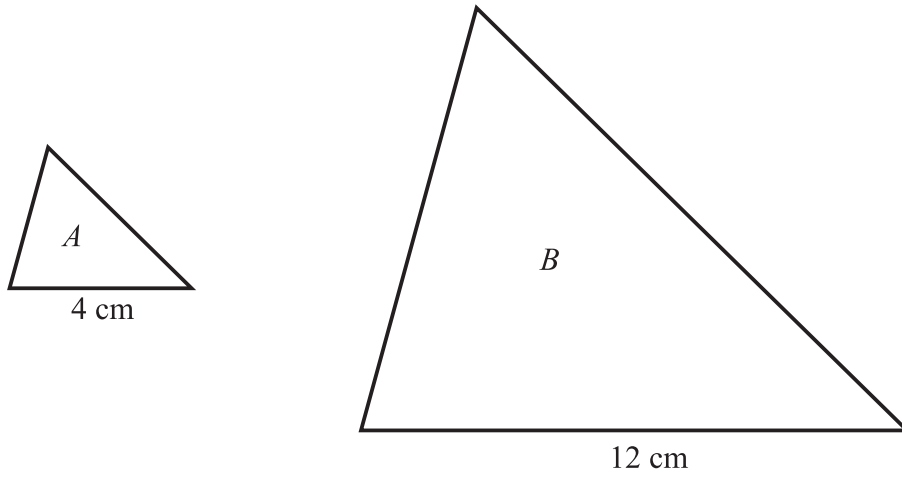b) Work out the value of y _____ **2**

12) Prove that the two shaded angles are equal.

_____ **3**

_____

_____

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_____

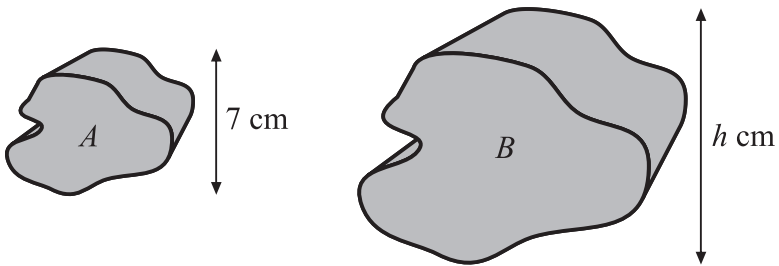13) Shapes *A* and *B* are mathematically similar.

Shape *A* has a base of 4 cm and an area of 14 cm^2.

Shape *B* has a base of 12 cm.

What is the area of shape *B*? _____ cm^2 **3**

14) *A* and *B* are two similar solids.

The volume of shape *A* is 100 cm^3.

The volume of shape *B* is 800 cm^3.

Calculate the height, *h*, of shape *B*.
Show your workings.

Height of *B* is _____ cm   **3**