Test - Transformations

Year: Year 8 · Duration: 45 minutes · /20

Name:	Date:	**Mark: /20**

Question	1	2	3	4	5	Total
marks	4	4	4	4	4	**20**
Mark						

Show your working.

Question 1 (4 marks)

Question 1 – Reflection and translation

Triangle ABC has $A(1, 2)$, $B(4, 2)$ and $C(1, 5)$.

a. Reflect it in the x-axis and write the new coordinates. (2 marks)

b. Translate ABC by $\begin{pmatrix} -3 \\ 2 \end{pmatrix}$ and write the new coordinates. (2 marks)

Question 2 (4 marks)

Question 2 – Rotation and describing

Triangle T has vertices $(2, 1)$, $(4, 1)$ and $(2, 3)$.

a. Rotate T by 90° anticlockwise about the origin. Write the coordinates. (2 marks)

b. Describe the transformation that maps T to the triangle with vertices $(-2, -1)$, $(-4, -1)$, $(-2, -3)$. (2 marks)

Question 3 (4 marks)

Question 3 – Enlargement

Rectangle R is 5 cm by 3 cm. It is enlarged by scale factor 4.

a. Find the dimensions of the image. (1 mark)

b. Find the perimeter of R and of the image. (1 mark)

c. Find the area of R and of the image. (2 marks)

Question 4 (4 marks)

Question 4 – Problem: the poster

A school logo is 8 cm wide and has an area of 30 cm². It is enlarged for a banner so that it is 60 cm wide.

a. Find the scale factor. (1 mark)
b. Find the area of the logo on the banner in cm² and in m². (3 marks)

Question 5 (4 marks)

Question 5 – Problem: combined transformation

Triangle T has vertices $(1, 1)$, $(2, 1)$ and $(1, 3)$. It is reflected in the line $x = 3$ to give T_1.

a. Write the vertices of T_1. (2 marks)
b. T_1 is enlarged by scale factor 2, centre the origin, to give T_2. Write the vertices of T_2. (2 marks)