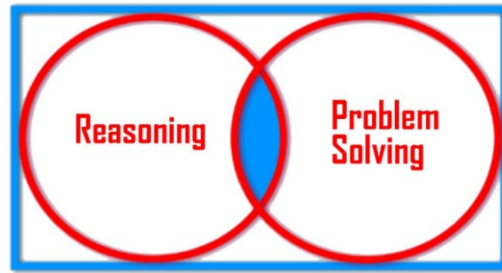


GCSE Foundation (5 – 1)

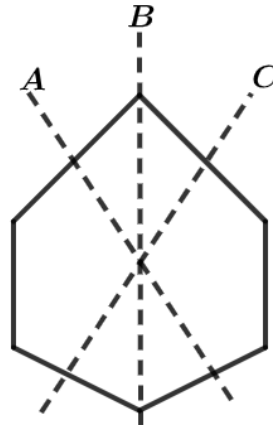


fluidmaths.co.uk

Mathematical Reasoning Questions (The Four Transformations) – Set 1

**The marks shown are for guidance purposes only
[Total marks: 14 Marks]**

- 1 Tamara drew the three lines labelled A, B and C as line symmetries for the hexagon shown below



Which of her lines is **not** accurate? Choose all that apply

- a) B
- b) A
- c) C
- d) None of the above

[1Mark]

- 2 Ayesha translates the coordinate $(-5, -2)$ by moving it 2 units to the right and 3 units down.

Which option below will be the new coordinate?

Choose one answer

- a) $(-5, -2)$
- b) $(-7, -5)$
- c) $(-3, -5)$
- d) $(3, 5)$

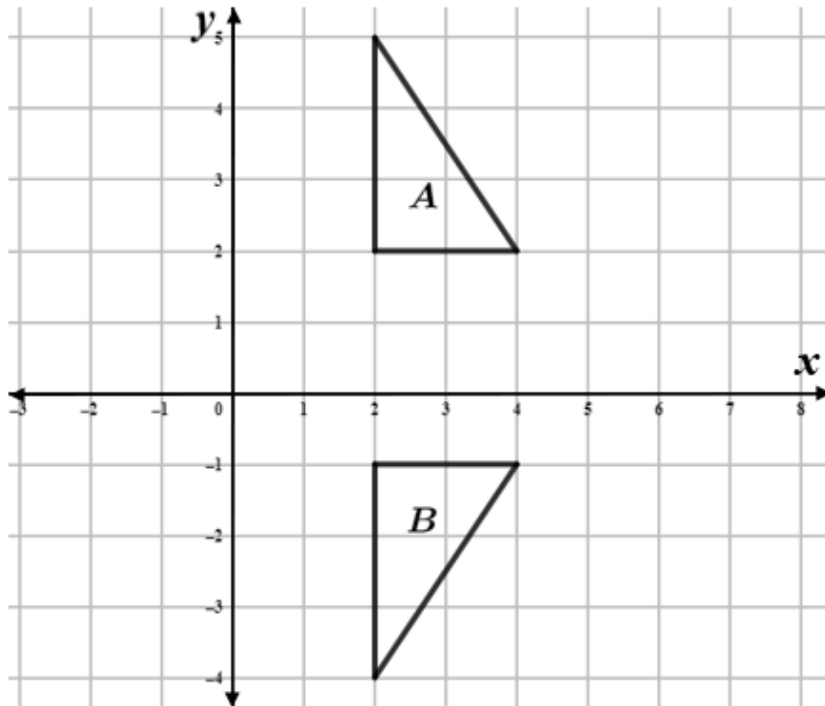
[1Mark]

- 3 Which coordinate is the image of the coordinate $(0, -8)$ when it is reflected in the y -axis? Choose one answer

- a) $(8, 0)$
- b) $(-8, 0)$
- c) $(0, -8)$
- d) None of the above

[1Mark]

- 4 What single transformation maps shape A to shape B shown on the grid below?



Choose one answer

- a) Reflection in the line $y = 0$
- b) Reflection in the x – axis
- c) Reflection in the line $y = 0.5$
- d) Reflection in the y – axis

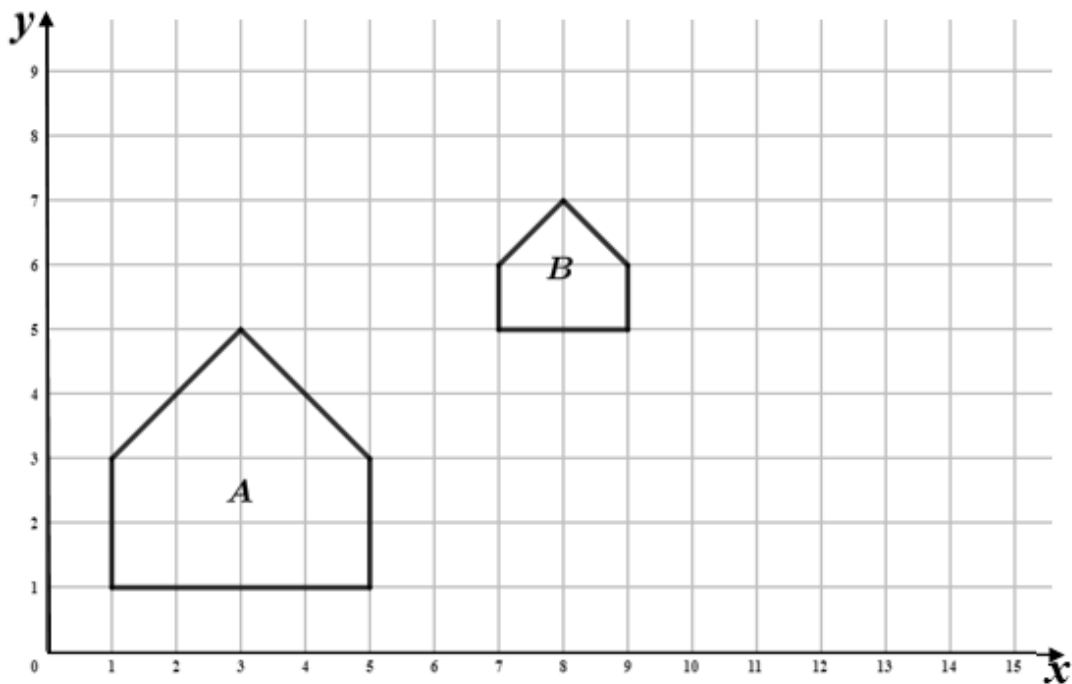
[1Mark]

- 5 What transformation will map the coordinate $(2, -1)$ to the coordinate $(-2, -1)$? Choose all the correct answers

- a) Reflection in the x – axis
- b) Reflection in the y – axis
- c) Rotation about the origin in the clockwise direction
- d) Translation by the vector $\begin{pmatrix} -4 \\ 0 \end{pmatrix}$

[2Marks]

6 What single transformation maps shape A to shape B?



- a) Reduction by a scale factor of $\frac{1}{2}$ from the point (13, 9)
- b) Enlargement by a scale factor of $\frac{1}{2}$ from the point (13, 9)
- c) Enlargement by a scale factor of 2 from the point (0,0)
- d) Reduction by a scale factor of 2 from the point (0,0)

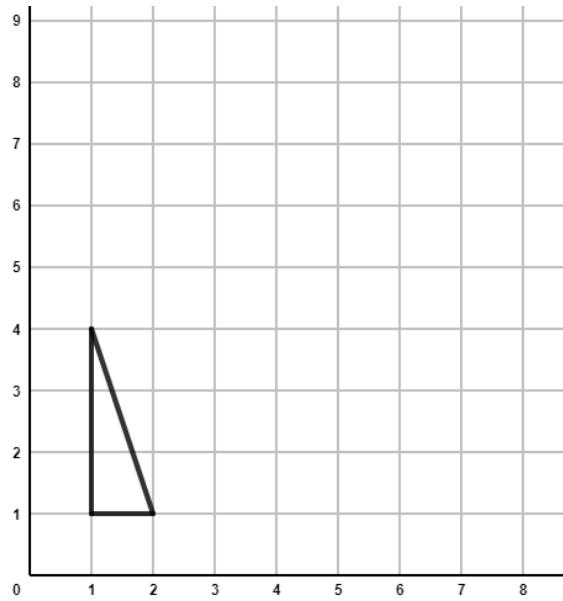
[1Mark]

7 Answer **True** or **False** to the following statements

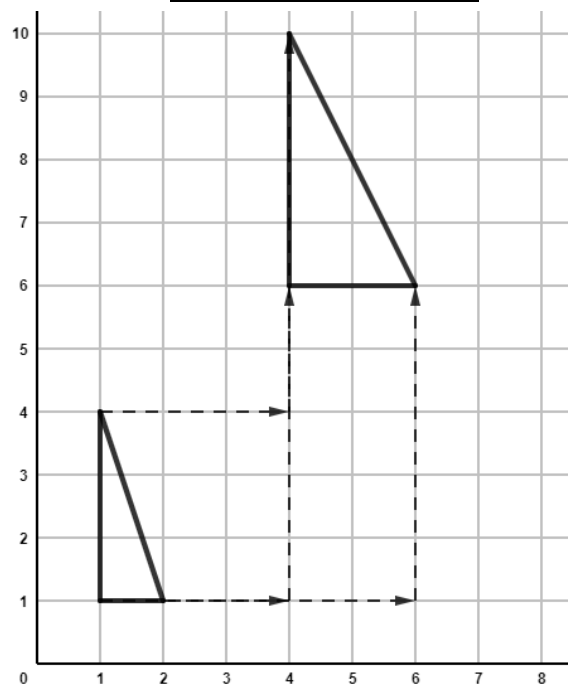
- a) An enlargement by a scale factor of 1 will cause an object to increase by 100%
- b) Translation by the vector $\begin{pmatrix} 1 \\ 1 \end{pmatrix}$ is the same as rotation through 90° clockwise about the origin
- c) Reflection in the x – axis is the same as Reflection in the line $y = 0$

[3Marks]

8 Enlarge the triangle below by a scale factor of 2



Leah's Answer



Identify the mistake Leah made

[1Mark]

9	<p>What is the image of the coordinate $(4, -1)$ if it is rotated about the origin through 180°? Choose one answer</p> <ul style="list-style-type: none">a) $(-4, -1)$b) $(4, 1)$c) $(-4, 1)$d) None of the above <p style="text-align: right;">[1Mark]</p>
10	<p>The coordinate $A = (5, 3)$ is rotated 90° anticlockwise about the origin to form the coordinate B</p> <p>The coordinate B is then translated by the vector $\begin{pmatrix} 0 \\ -6 \end{pmatrix}$ to form the coordinate C. What single transformation maps A to C?</p> <p>Choose all the correct answers</p> <ul style="list-style-type: none">a) Reflection in the line $y = x$b) Reflection in the line $y = -x$c) Rotation through 270° anticlockwise about the origind) Rotation through 90° clockwise about the origin <p style="text-align: right;">[2Marks]</p>