

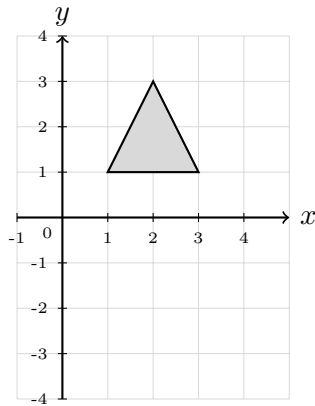
Foundation GCSE: Reflection

Name: _____

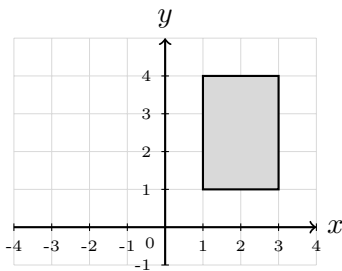
Class: _____

Instructions: Answer all questions. Each question features an accompanying grid diagram. Questions are ordered from easiest (1) to hardest (10). Working out should be shown where appropriate.

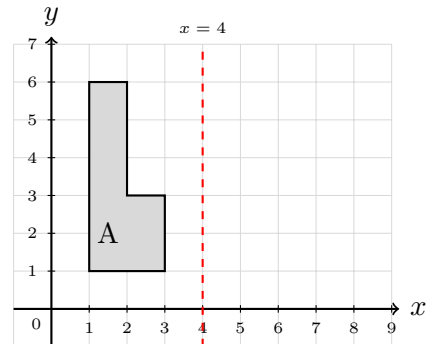
1. Reflect the triangle in the x -axis ($y = 0$). State the coordinates of the vertices of the reflection.



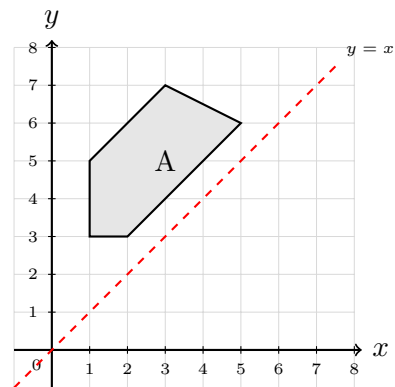
2. Reflect the rectangle in the y -axis ($x = 0$). State the coordinates of the vertices of the image.



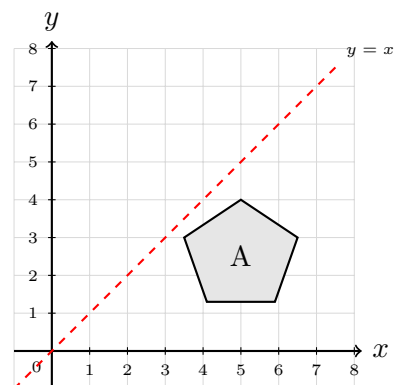
3. Reflect shape A in the vertical line $x = 4$. State the coordinates of the vertices of the image.



4. Reflect shape A in the line $y = x$. State the coordinates of the vertices of the image.

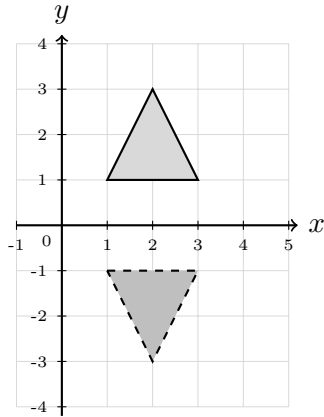


5. Reflect (approximately) the regular pentagon in the line $y = x$.

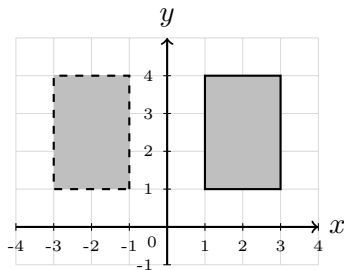


Answers & Worked Solutions

1. $(1, -1)$, $(3, -1)$, $(2, -3)$: negate each y -coordinate.

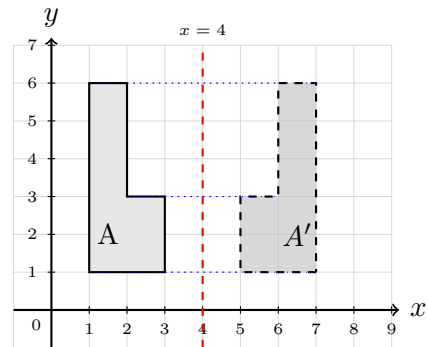


2. $(-1, 1)$, $(-3, 1)$, $(-3, 4)$, $(-1, 4)$: negate each x -coordinate.



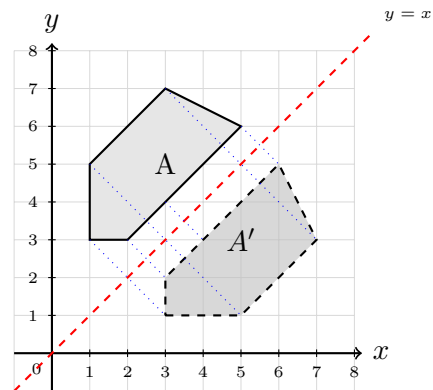
3. Each vertex is flipped horizontally across the line $x = 4$:

$$\begin{aligned} (1, 1) &\rightarrow (7, 1), & (3, 1) &\rightarrow (5, 1), & (3, 3) &\rightarrow (5, 3), \\ (5, 3), & (2, 3) &\rightarrow (6, 3), & (2, 6) &\rightarrow (6, 6), \\ (1, 6) &\rightarrow (7, 6). \end{aligned}$$



4. Reflecting any point (x, y) in the line $y = x$ swaps its coordinates to (y, x) :

$$\begin{aligned} (1, 3) &\rightarrow (3, 1), & (1, 5) &\rightarrow (5, 1), & (3, 7) &\rightarrow (7, 3), \\ (5, 6) &\rightarrow (6, 5), & (3, 4) &\rightarrow (4, 3), \\ (2, 3) &\rightarrow (3, 2). \end{aligned}$$



5. Reflection of regular pentagon about $y = x$:

