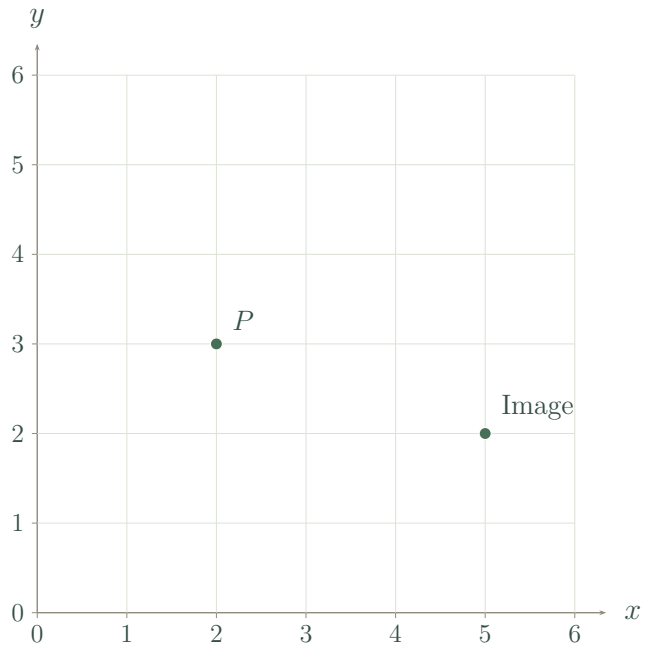
Translations/reflections/rotations

6 questions | 10 marks

Equivalent correct methods earn the corresponding marks.

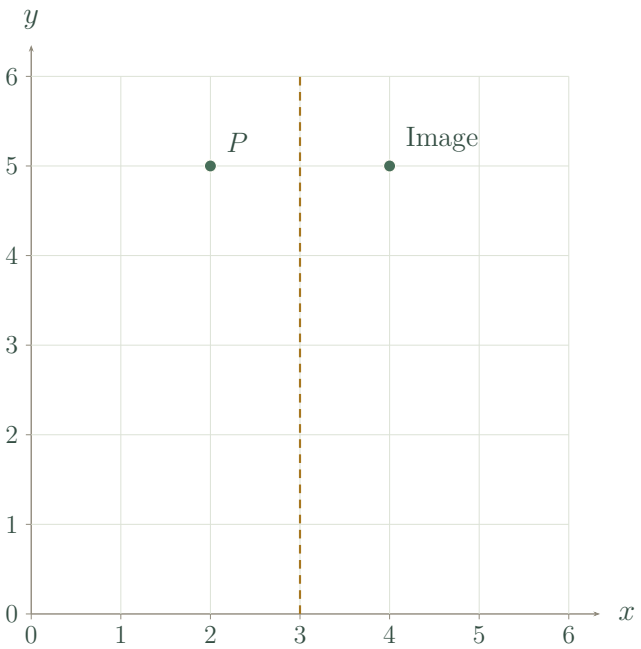
1. Translate $P(2, 3)$ by 3 right and 1 down. [1 mark]



$2 + 3 = 5;\ 3 - 1 = 2.$

Answer: $(5, 2)$

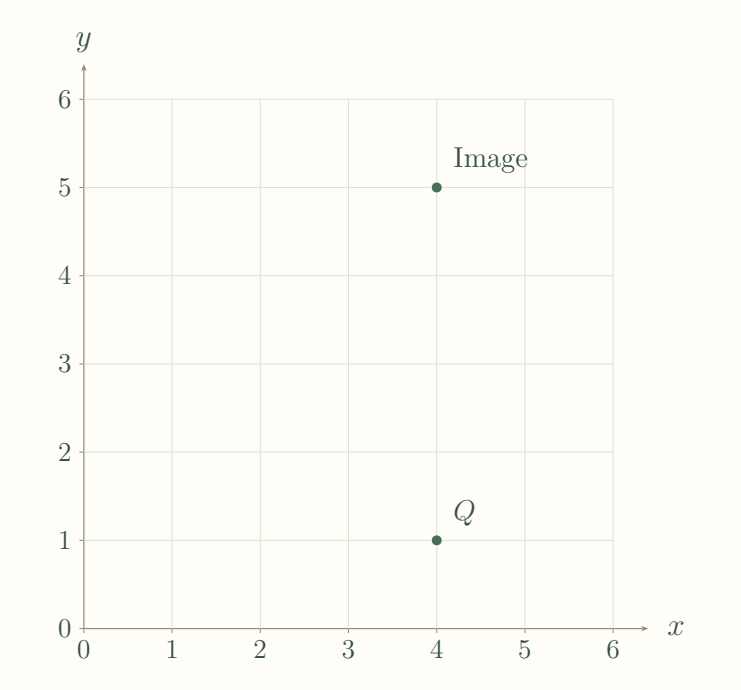
2. Reflect $P(2, 5)$ across $x = 3$. Give its image coordinates. [1 mark]



P is 1 left of the mirror, so its image is 1 right at the same height.

Answer: $(4, 5)$

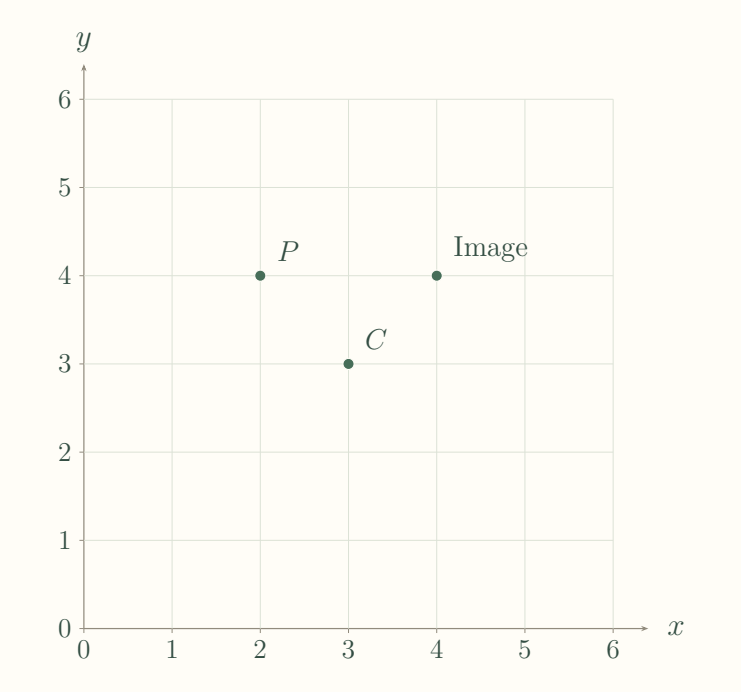
3. Reflect $Q(4, 1)$ across $y = 3$. Give its image coordinates. [1 mark]



Q is 2 below the mirror, so its image is 2 above it.

Answer: $(4, 5)$

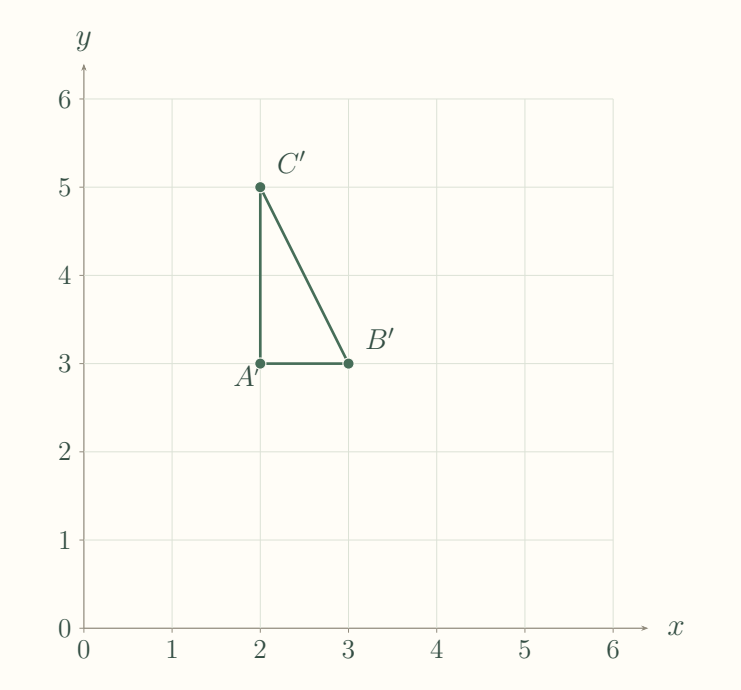
4. Rotate $P(2, 4)$ a quarter turn clockwise about $C(3, 3)$. Find its image. [2 marks]



The offset from C is 1 left and 1 up. A clockwise quarter turn changes this to 1 right and 1 up.

Answer: $(4, 4)$

5. Translate $A(1,1)$, $B(2,1)$, $C(1,3)$ by 1 right and 2 up. Give all image coordinates. [3 marks]



Move all three points by the same amounts.

Answer: $A'(2,3)$, $B'(3,3)$, $C'(2,5)$.

6. A pupil moves two triangle corners 2 right but the third corner 3 right. Is this a translation of the whole triangle? Explain. [2 marks]

Moving one corner differently can change side lengths or the shape.

Answer: No. Every point must move by the same distance in the same direction.