DESCRIBE THE CHANGES AND INVARIANCE ACHIEVED BY COMBINATIONS OF ROTATIONS, REFLECTIONS AND TRANSLATIONS

Invariant - a property which is unchanged during a transformation

★ Reflections, rotations, and translations all have invariance



Shape *P* is transformed so that exactly one vertex is invariant.

The answer is B because when Shape P is rotated by 180° , centre (2, 0), it still has the point (2, 0).

1. Which of the following points (-2, 0), (0, -5), (3, -3) are invariant points when reflected in the x-axis?

★ Only those points which lie on the line are invariant points when reflected in the line

So, only those points are invariant which lie on the x-axis. Hence, the invariant points must have y-coordinate = 0. Therefore, only (-2, 0) is the invariant point.