

Quiz**Name**

Take a polar coordinate system for the plane. Extend the polar axis to a horizontal axis and supplement it by a vertical axis through the pole O to get a Cartesian coordinate system.

1. Consider the point P with Cartesian coordinates $(-3, 3)$. Determine polar coordinates (r, θ) for P such that $-\frac{\pi}{2} < \theta < \frac{\pi}{2}$. Show how you arrived at your answer.

2. Consider the point P with polar coordinates $(-5, 37)$. Find an exact expression for the Cartesian coordinates of P . Approximate this expression with a calculator and identify the quadrant (I, II, III, or IV) in which this point lies.

3. In the complex plane of this page position the points that represent the sum $P_1 + P_2$ and the product P_1P_2 of the points P_1 and P_2 . Label each of the points appropriately and show how you arrived at your answer.

