

Answer on question #34606 – Math – Complex Analysis

Which point represents the polar coordinates (6, 30)?

- A. (5.2, 3)
- B. (5.3, 2)
- C. (3, 5.2)
- D. (3.2, 5)

Solution

We have $r^2 = x^2 + y^2$, $\tan \varphi = \frac{y}{x}$.

Therefore we get

$$\begin{aligned}\frac{y}{x} = \tan 30 = \frac{1}{\sqrt{3}}, \quad \Rightarrow \quad x &= \sqrt{3}y \\ 6^2 = (\sqrt{3}y)^2 + y^2, \quad \Rightarrow \quad 36 &= 4y^2 \Rightarrow y^2 = 9 \Rightarrow y = 3 \\ x &= 3\sqrt{3} \approx 5.2\end{aligned}$$

Answer: A.