Answer on Question#34745 – Math – Trigonometry

Question.

Which pair represents (4, –4) in polar plane?

A. (6.56, 47.77)

B. (6.56, 43.77)

C. (5.66, 44.76)

D. (5.56, 47.77)

Solution.

We use the formula:

$$x = r\cos\varphi$$

$$y = r\sin\varphi$$

where (x, y) – a Cartesian coordinate system.

So, we have the system: $\begin{cases} 4 = r\cos\varphi \\ -4 = r\sin\varphi \end{cases}$. Divide the second on the firs:

$\tan\varphi = -1 \rightarrow \varphi = \frac{1}{4}(4\pi n - \pi), n \in Z$

So, $r = \frac{4}{\cos\frac{\pi}{4}} = 4\sqrt{2} = 5.66.$

Answer. **C**