# Answer on Question # 34605 – 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 following formulas:

$$x = r\cos\varphi$$

$$y = r\sin\varphi$$

where (x, y) is defined in Cartesian coordinate system.

So, we have the system:

$\begin{cases} 4 = r\cos\varphi \\ -4 = r\sin\varphi \end{cases}$ . Divide the second by the first one:

$\tan\varphi = -1 \Rightarrow \varphi = \dfrac{1}{4}(4\pi n - \pi), n \in Z.$

So $r = \dfrac{4}{\cos\dfrac{\pi}{4}} = 4\sqrt{2} \approx 5.66$

**Answer: C. (5.66, 44.76)**