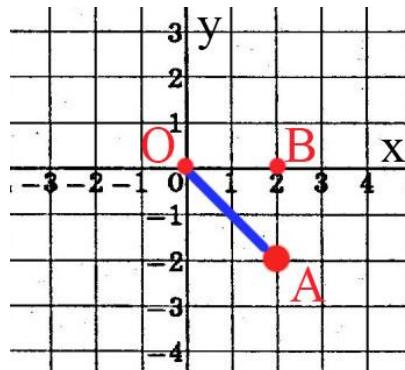


What is the exact value of $\sec \alpha$ if it passes through $A(2, -2)$ in standard position?

Solution:



So, we need to find

$$\sec(\angle BOA) = \frac{1}{\cos(\angle BOA)}$$

The point A is situated in the 4th quadrant, so the value of cosine is positive.

From the triangle BOA :

$$OB = BA = 2$$

The triangle BOA is $\Delta \Rightarrow \angle BOA = \angle BAO = 45^\circ$

$$\cos(\angle BOA) = \cos(45^\circ) = \frac{\sqrt{2}}{2}$$

$$\sec(\angle BOA) = \frac{1}{\cos(\angle BOA)} = \frac{1}{\frac{\sqrt{2}}{2}} = \frac{2}{\sqrt{2}} = \sqrt{2}$$

Answer: $\sqrt{2}$