

Answer 10

10. Angle A is an acute angle and $\sin(A) = 11/14$. What is the value of $\cos(A)$?
- A) $3/14$
 - B) $\sqrt{3} / 14$
 - C) $5\sqrt{3} / 14$
 - D) $\sqrt{(3/14)}$
 - E) $5/14$

This is another tricky question - essentially because they didn't base this on the Unit Circle where the radius (hypotenuse) would be 1.

The correct answer is C.

First, since $\sin \theta = \frac{opp}{hyp}$, decoding the given information $\sin A = \frac{11}{14}$ means the length of the opposite side is 11 and the length of the hypotenuse is 14.

Since the question asks for the value of $\cos(A)$, we're going to need to find the length of the adjacent side since $\cos \theta = \frac{adj}{hyp}$.

We can use the Pythagorean Theorem to find the adjacent side $11^2 + x^2 = 14^2$. Then, $121 + x^2 = 196$ and $x^2 = 75$.

$$\text{Then, } x = \sqrt{75} \quad x = \sqrt{25 * 3} \quad x = 5\sqrt{3}$$

$$\text{So, } \cos A = \frac{5\sqrt{3}}{14}$$