TRIGONOMETRY EXAMPLE 2

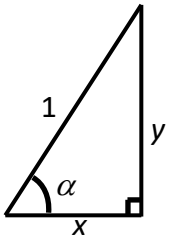
If $\cos\alpha = x$ and $0^0 < x < 90^0$, then what is $\tan x$?

(A) $\dfrac{\sqrt{1-x^2}}{x}$ (B) $\dfrac{x}{\sqrt{1-x^2}}$ (C) $\dfrac{-\sqrt{1-x^2}}{x}$ (D) $\dfrac{\sqrt{1+x^2}}{x}$

SOLUTION

We are given $\cos\alpha = x$.

Draw a right-angled triangle and mark and angle α .
Mark the adjacent side *x* and the hypotenuse 1.
Now calculate the third side, *y*, of the triangle, using Pythagoras' theorem.



$$\therefore y^2 = 1^2 - x^2$$
$$\therefore y = \sqrt{1-x^2}$$
$$\therefore \tan\alpha = \frac{\sqrt{1-x^2}}{x}$$

So, the correct answer is A.