Topic: Sine, cosine, and tangent

Question: In the right triangle ABC, $\cos\angle C = 30/50$. What is the length of the hypotenuse of triangle ABC?

Answer choices:

A 30

B 50

C $\frac{1}{50}$

D 40

Solution: B

The cosine of an angle θ is equivalent to the length of the side adjacent to θ, divided by the length of the hypotenuse.

$$\cos\theta = \frac{\text{adjacent}}{\text{hypotenuse}}$$

Therefore, the length of the hypotenuse is 50.

Topic: Sine, cosine, and tangent

Question: The ratio of the length of the side of a triangle opposite an angle, to the length of the longest side of the triangle (the hypotenuse) is equal to which value?

Answer choices:

A Tangent of the angle

B Sine of the angle

C Cosine of the angle

D Square of the other side

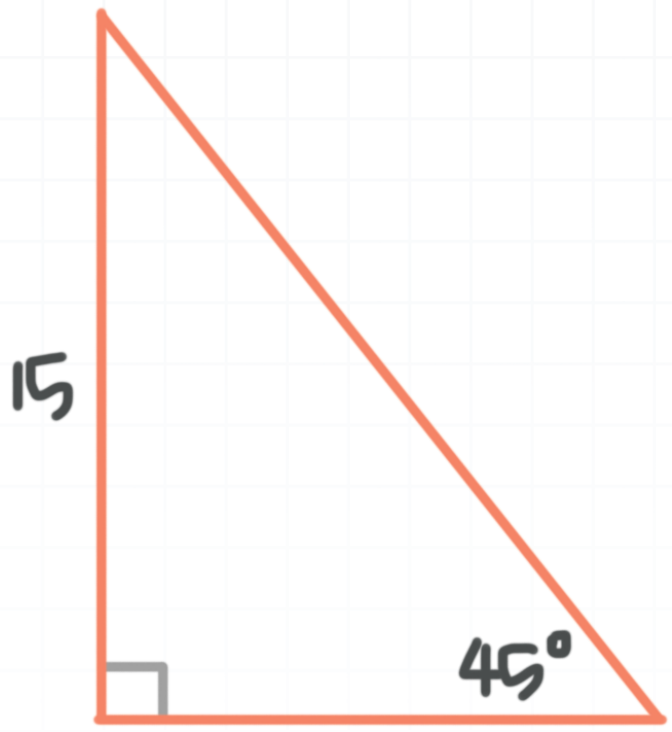
Solution: B

The sine of an angle θ is equivalent to the length of the side opposite the angle, divided by the length of the hypotenuse.

$$\sin\theta = \frac{\text{opposite}}{\text{hypotenuse}}$$

Topic: Sine, cosine, and tangent

Question: Which equation would be used to solve for x?



Answer choices:

A $\tan 45^\circ = \frac{15}{x}$

B $\sin 45^\circ = \frac{15}{x}$

C $\tan 45^\circ = \frac{x}{15}$

D $\cos 45^\circ = \frac{x}{15}$

Solution: A

Given the position of the angle $\theta = 45°$ in the right triangle, the length of the opposite side is 15 and the length of the adjacent side is x.

Tangent of an angle gives the relationship between the side opposite to the angle and the side adjacent to the angle.

$$\tan\theta = \frac{\text{opposite}}{\text{adjacent}}$$

$$\tan 45° = \frac{15}{x}$$