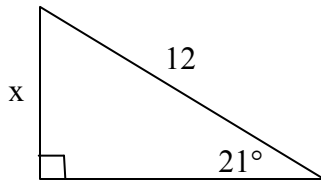


Example 2 Using Sine

Find x.



Because the hypotenuse and the side opposite the 21° angle is given, the trig function using those 2 pieces of information is sine. This allows use to set up the following equation. Once the equation is set, then solve the proportion.

$$\sin 21^\circ = \frac{x}{12}$$

Equation

$$x = 12 \cdot (\sin 21^\circ)$$

cross multiply

$$x = 12 \cdot (.3584)$$

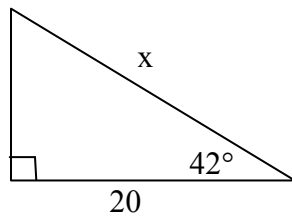
find sine of 21 degrees

$$x = 4.3004$$

multiply, round to the nearest ten thousandths

Example 3 Using Cosine

Find x.



Because the hypotenuse and the side adjacent the 42° angle is given, the trig function using those 2 pieces of information is cosine. This allows use to set up the following equation. Once the equation is set, then solve the proportion.

$$\cos 42^\circ = \frac{20}{x}$$

Equation

$$x(\cos 42^\circ) = 20$$

cross multiply

$$x = \frac{20}{(\cos 42^\circ)}$$

divide each side by cosine 42 degrees

$$x = \frac{20}{(.7431)}$$

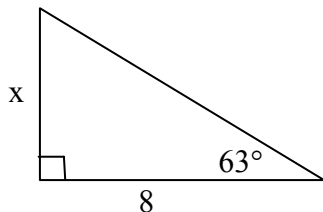
find cosine of 42 degrees

$$x = 26.9127$$

divide, round to the nearest ten thousandths

Example 4 Using Tangent

Find x.



Because the side opposite and the side adjacent to the 63° angle is given, the trig function using those 2 pieces of information is tangent. This allows use to set up the following equation. Once the equation is set, then solve the proportion.

$$\tan 63^\circ = \frac{x}{8}$$

Equation

$$x = 8 \cdot (\tan 63^\circ)$$

cross multiply

$$x = 8 \cdot (1.9626)$$

find tangent of 63 degrees

$$x = 15.7009$$

multiply, round to the nearest ten thousandths

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