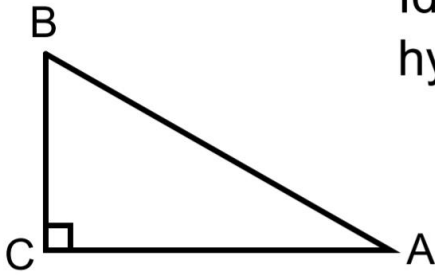


Warm Up

Identify the opposite side, adjacent side, and hypotenuse of angle A in the triangle.

opp: \overline{BC} adj: \overline{AC} hyp: \overline{AB}

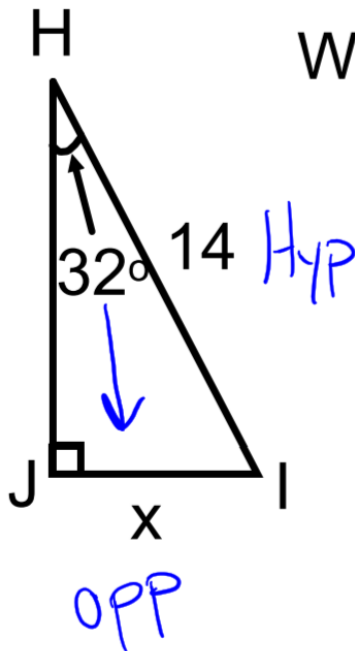


What side is opposite of angle B?

\overline{AC}

RTT Notes:

What is the value of x?



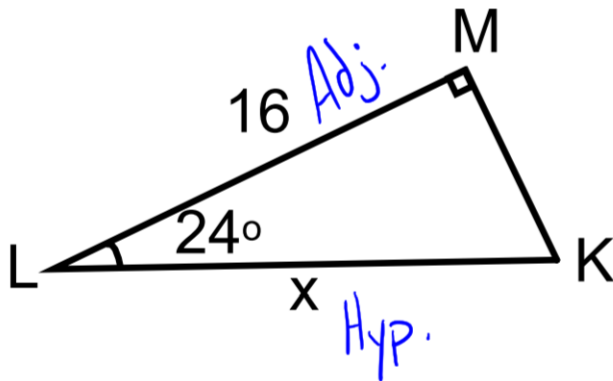
$$\sin(32) = \frac{x}{14}$$

$$x = 14 \sin(32)$$

$$x = 7.419$$

RTT Notes:

What is the value of x?



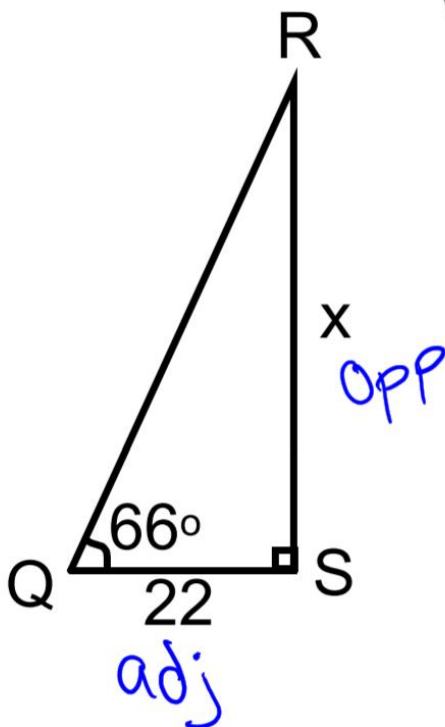
$$\cos(24) = \frac{16}{x}$$

$$x = \frac{16}{\cos(24)}$$

$$x = 17.514$$

RTT Notes:

What is the value of x?



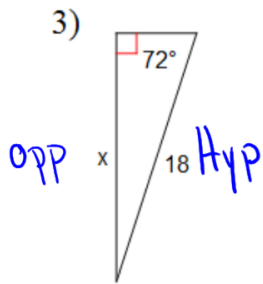
$$\tan(66) = \frac{x}{22}$$

$$x = 22 \cdot \tan(66)$$

$$x = 49.413$$

You Try

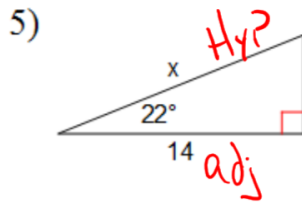
3, 5, and 7



$$\sin(72) = \frac{x}{18}$$

$$x = 18 \cdot \sin(72)$$

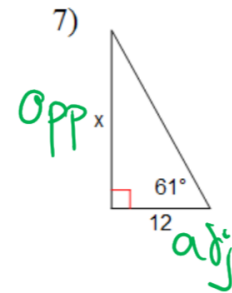
$$x = 17.119$$



$$\cos(22) = \frac{14}{x}$$

$$x = \frac{14}{\cos(22)}$$

$$x = 15.099$$



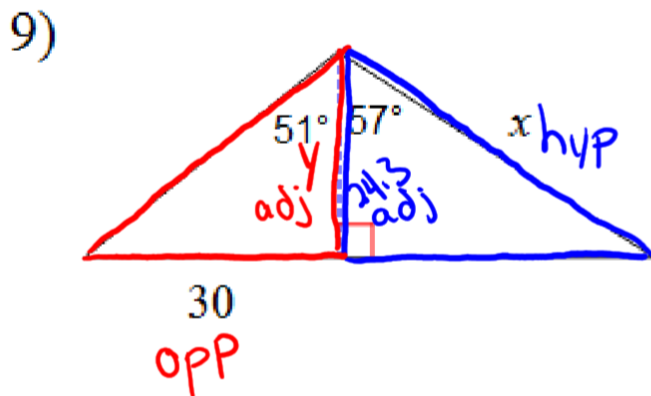
$$\tan(61) = \frac{x}{12}$$

$$x = 12 \tan(61)$$

$$x = 21.649$$

Let's step this up

Find the value of x. Round to the nearest tenth



$$\tan(51) = \frac{30}{y}$$

$$y = \frac{30}{\tan(51)}$$

$$y = 24.3$$

$$\cos(57) = \frac{24.3}{x}$$

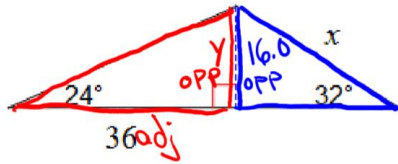
$$x = \frac{24.3}{\cos(57)}$$

$$x = 44.6$$

One more.

Find the value of x . Round all answers to the nearest tenth

10)



$$\tan(24) = \frac{y}{36}$$

$$y = 36 \cdot \tan(24)$$

$$y = 16.0$$

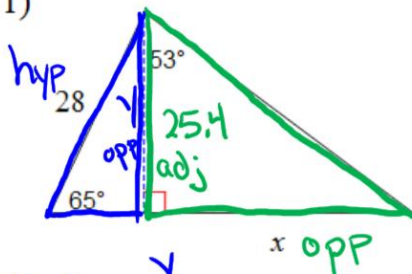
$$\sin(32) = \frac{16}{x}$$

$$x = \frac{16}{\sin(32)}$$

$$x = 30.2$$

You try 11 and 13

11)



$$\sin(65) = \frac{y}{28}$$

$$y = 28 \cdot \sin(65)$$

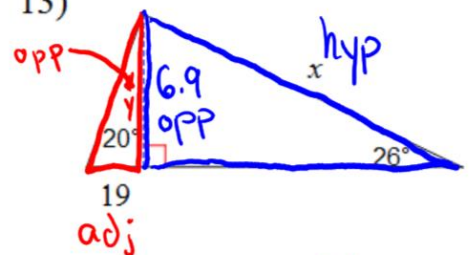
$$y = 25.4$$

$$\tan(53) = \frac{x}{25.4}$$

$$x = 25.4 \cdot \tan(53)$$

$$x = 33.7$$

13)



$$\tan(20) = \frac{y}{19}$$

$$y = 6.9$$

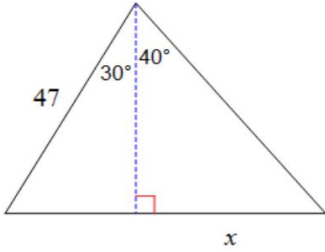
$$\sin(26) = \frac{6.9}{x}$$

$$x = \frac{6.9}{\sin(26)}$$

$$x = 15.7$$

Recap & Think

Explain how you would find the value of x .

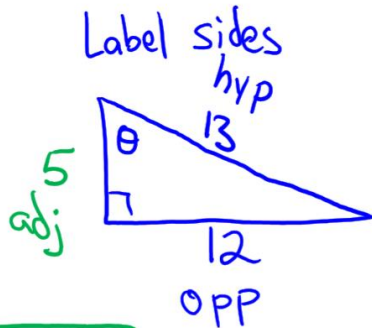


Find the altitude of triangle using \cos .
Then use $\tan(40) = \frac{x}{\text{altitude}}$

If the $\sin(\theta) = 12/13$, what is the $\cos(\theta)$?

Draw a triangle.

$$\sin \theta = \frac{12}{13} = \frac{\text{opp}}{\text{hyp}}$$



Use pythagorean theorem to find third side.

$$a^2 + 12^2 = 13^2$$

$$a^2 + 144 = 169$$

$$a^2 = 25$$

$$a = 5$$

$$\cos(\theta) = \frac{\text{adj}}{\text{hyp}} = \frac{5}{13}$$

