

SOH-CAH-TDA

FINDING MISSING SIDES WITH TRIG RATIOS

Make sure your calculator is in DEGREE MODE!

Steps:

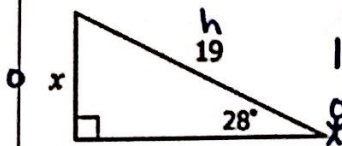
1. Label sides according to angle.
2. Choose Trig ratio
3. Set up proportion
4. Cross multiply

$$\frac{\sin(\angle)}{1} = \frac{o}{h}$$

$$\frac{\cos(\angle)}{1} = \frac{a}{r}$$

$$\frac{\tan(\angle)}{1} = \frac{o}{a}$$

1.

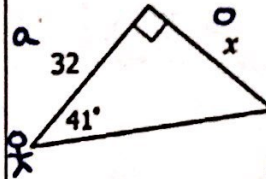


$$\frac{\sin(28)}{1} = \frac{x}{19}$$

$$19 \cdot \sin(28) = x$$

$$8.9 = x$$

2.

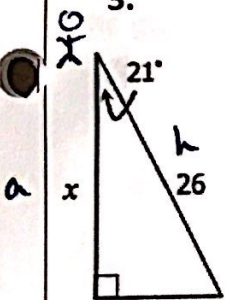


$$\frac{\tan(41)}{1} = \frac{x}{32}$$

$$32 \tan(41) = x$$

$$27.8 = x$$

3.

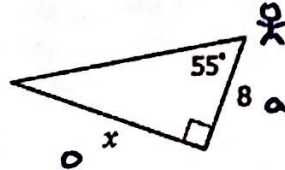


$$\frac{\cos(21)}{1} = \frac{x}{26}$$

$$26 \cos(21) = x$$

$$24.3 = x$$

4.

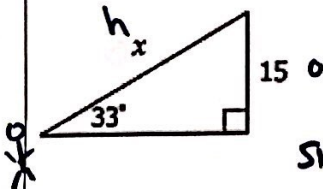


$$\frac{\tan(55)}{1} = \frac{x}{8}$$

$$8 \tan(55) = x$$

$$11.4 = x$$

5.

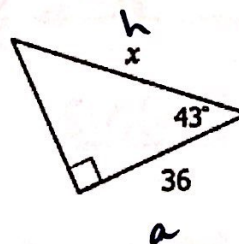


$$\frac{\sin(33)}{1} = \frac{15}{x}$$

$$15 = \frac{x \cdot \sin(33)}{\sin(33)}$$

$$27.5 = x$$

6.



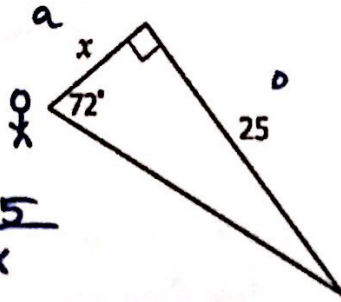
$$\frac{\cos(43)}{1} = \frac{36}{x}$$

$$36 = \frac{x \cos(43)}{\cos(43)}$$

$$49.2 = x$$

Name: _____

7.



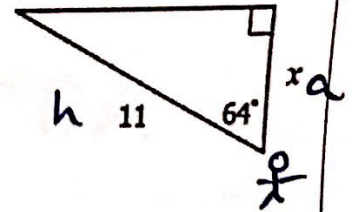
$$\frac{\tan(72)}{1} = \frac{25}{x}$$

$$25 = x \cdot \tan(72)$$

$$\frac{25}{\tan(72)} = \frac{x \cdot \tan(72)}{\tan(72)}$$

$$\boxed{18.1 = x}$$

8.

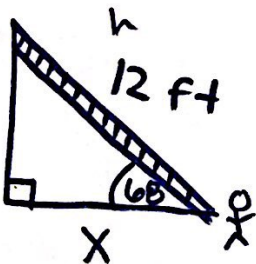


$$\frac{\cos(64)}{1} = \frac{x}{11}$$

$$x = 11 \cdot \cos(64)$$

$$\boxed{x = 4.8}$$

9. Jake leaned a 12-foot ladder against his house. If the angle formed by the ladder and the ground is 68° , how far from the base of the house did he place the ladder?

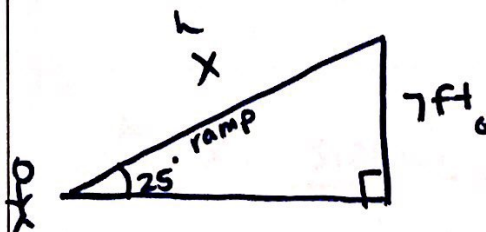


$$\frac{\cos(68)}{1} = \frac{x}{12}$$

$$12 \cdot \cos(68) = x$$

$$\boxed{4.5 \text{ ft} = x}$$

10. A ramp is used to load suitcases on an airplane. If the cargo door is 7 feet from the ground and the angle formed by the end of the ramp and the ground is 25° , how long is the ramp?



$$\frac{\sin(25)}{1} = \frac{7}{x}$$

$$x \sin(25) = \frac{7}{\sin(25)}$$

$$\boxed{x = 16.6 \text{ ft}}$$