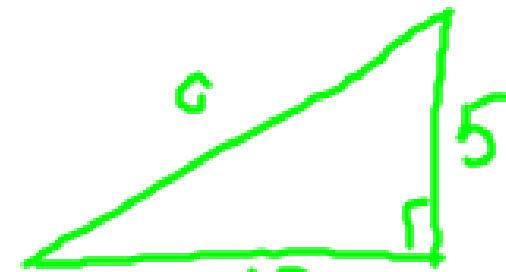
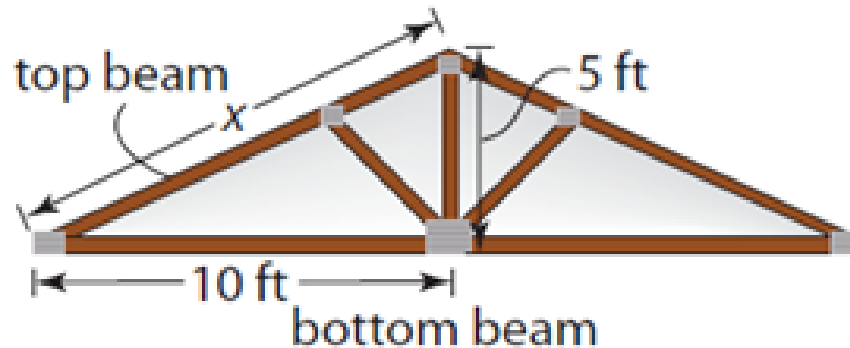


Intro to Right Angle Trig

Learning Target:

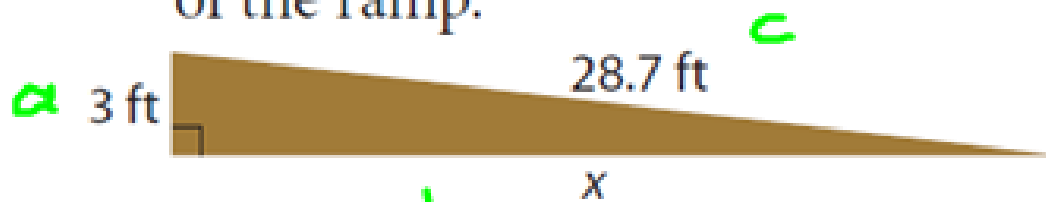
1. I can find the missing side of a right angle triangle using Trig ratios

- a) Bart is building a roof truss. Determine the length of the top beam.



$$\begin{aligned}
 a^2 + b^2 &= c^2 \\
 5^2 + 10^2 &= c^2 \\
 25 + 100 &= c^2 \\
 \sqrt{125} &= \sqrt{c^2} \\
 11.18 &= c
 \end{aligned}$$

- b) Dylan is using a moving ramp to load furniture into a truck. Determine the horizontal length of the ramp.

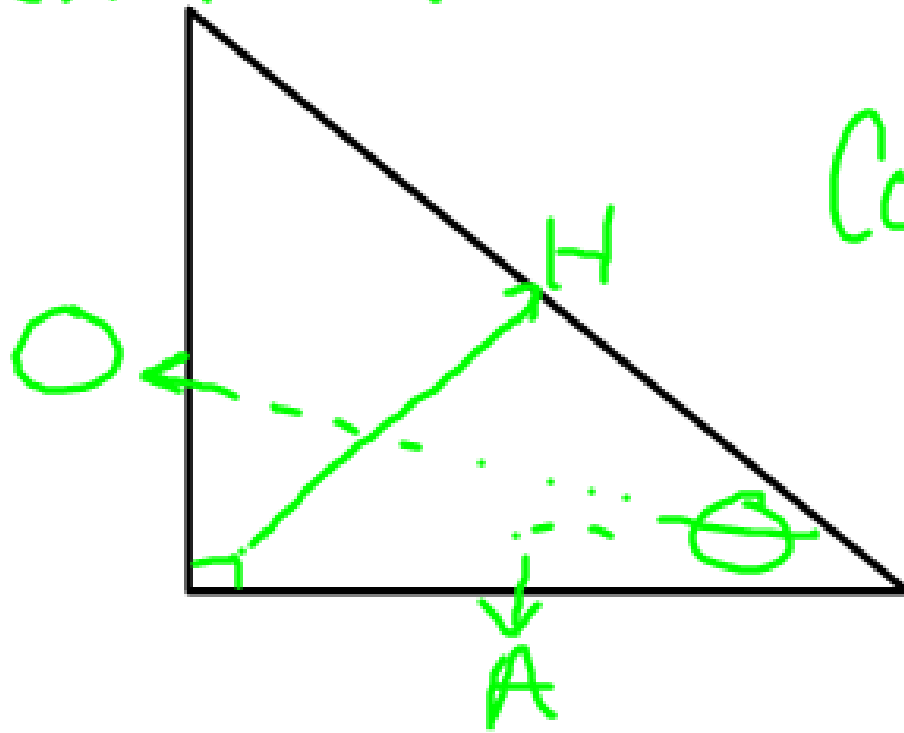


$$b = 28.54$$

$$\begin{aligned}
 a^2 + b^2 &= c^2 \\
 3^2 + b^2 &= 28.7^2 \\
 9 + b^2 &= 823.69 \\
 b^2 &= 814.69 \\
 b &= \sqrt{814.69}
 \end{aligned}$$

~~SOA CAH TOA~~

SOH CAH TOA



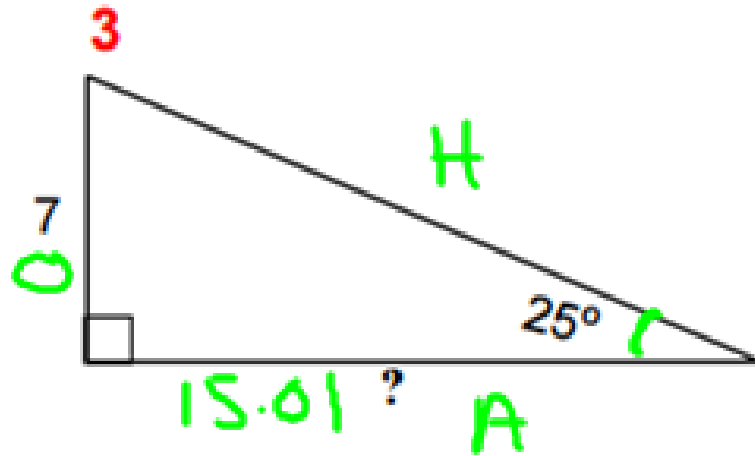
$$\sin \theta = \frac{O}{H}$$

$$\cos \theta = \frac{A}{H}$$

$$\tan \theta = \frac{O}{A}$$

Find the indicated missing angle:

SOH CAH TOA



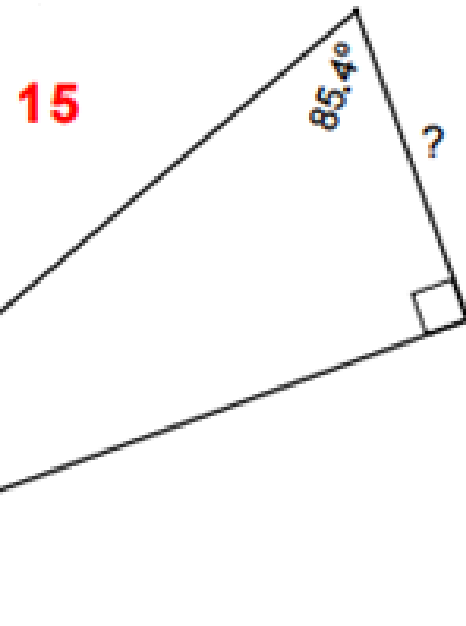
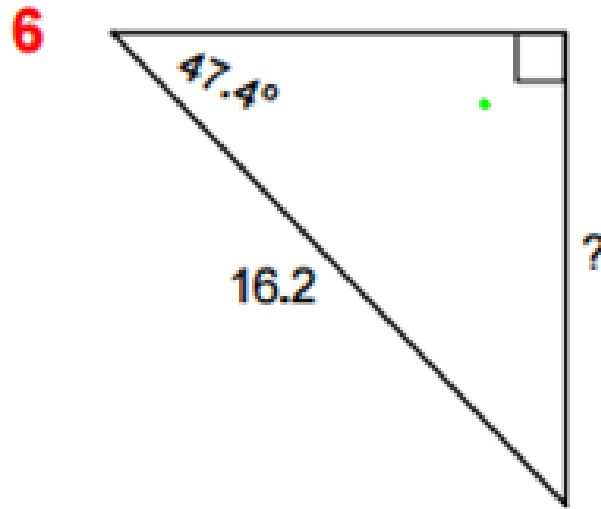
$$\tan \theta = \frac{O}{A}$$

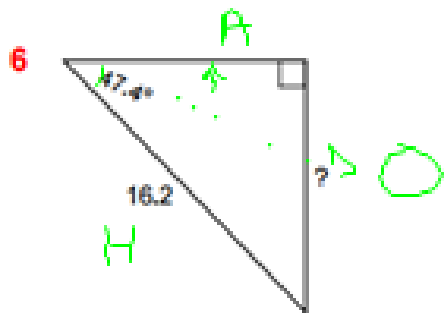
$$\tan 25 = \frac{7}{x}$$

$$x \cdot 0.4663 = \frac{7}{x} \cdot x$$

$$\frac{0.4663x}{0.4663} = \frac{7}{0.4663}$$

$$x = 15.01$$





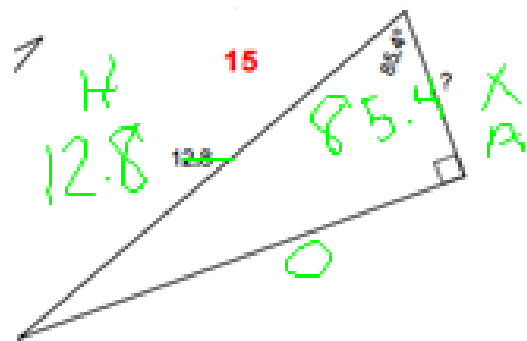
SIN CAN TOA

$$\sin \theta = \frac{O}{H}$$

$$\sin 47.4 = \frac{x}{16.2}$$

$$16.2 (0.736) = \frac{x}{16.2} \cdot 16.2$$

$$11.92 = x$$



SOH CAH TOA

$$\cos \theta = \frac{A}{H}$$

$$\cos 85.4 = \frac{X}{12.8}$$

1st - Find O, A, H

2nd - Find your Ratio

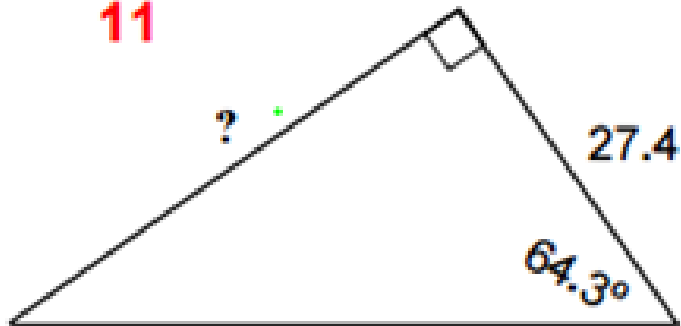
3rd - Sub in #'s

$$12.8 \cdot 0.0801 = \frac{X}{12.8} \cdot 12.8$$

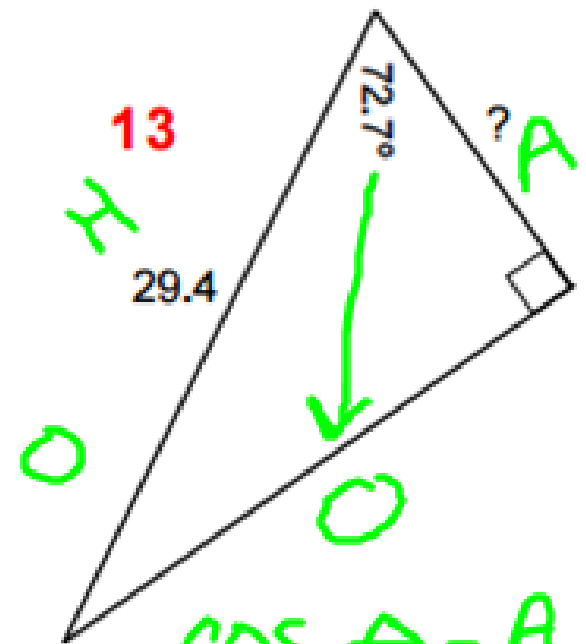
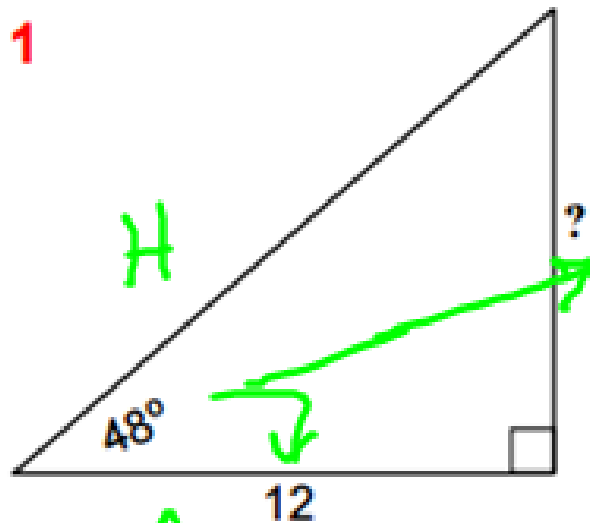
$$102 = X$$

Find the indicated missing side:

11



1



$$\cos \theta = \frac{A}{H}$$

$$\cos 72.7 = \frac{A}{29.4}$$

$$\tan \theta = \frac{O}{A} \quad (29.4) 0.2974 = \frac{A}{29.4}$$

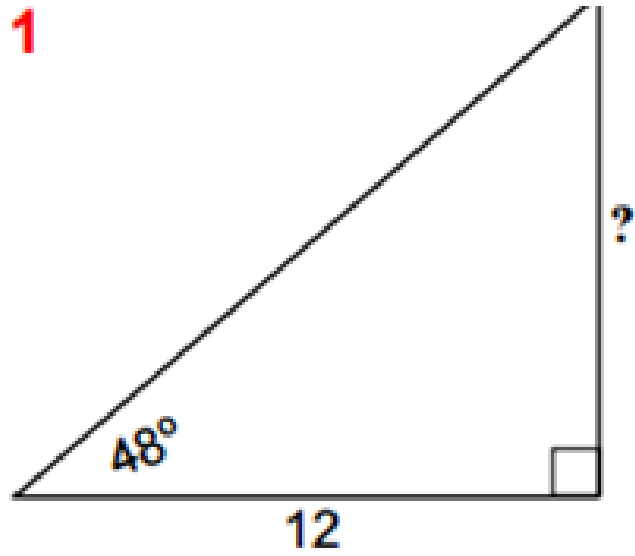
$$\tan 48 = \frac{x}{12}$$

$$12 \cdot 1.1106 = \frac{x}{12} \cdot 12$$

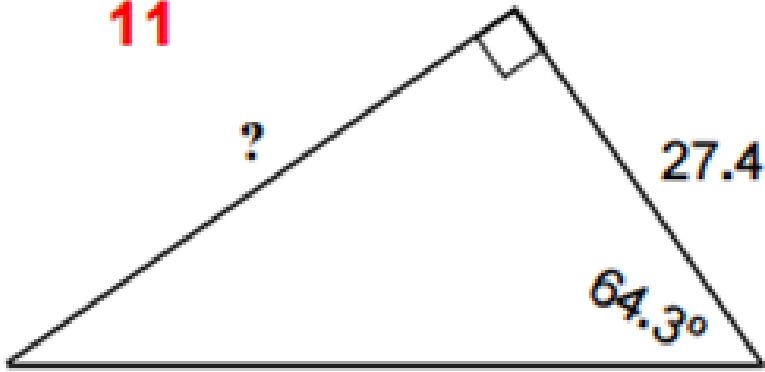
$$13.33 = x$$

$$8.74 = A$$

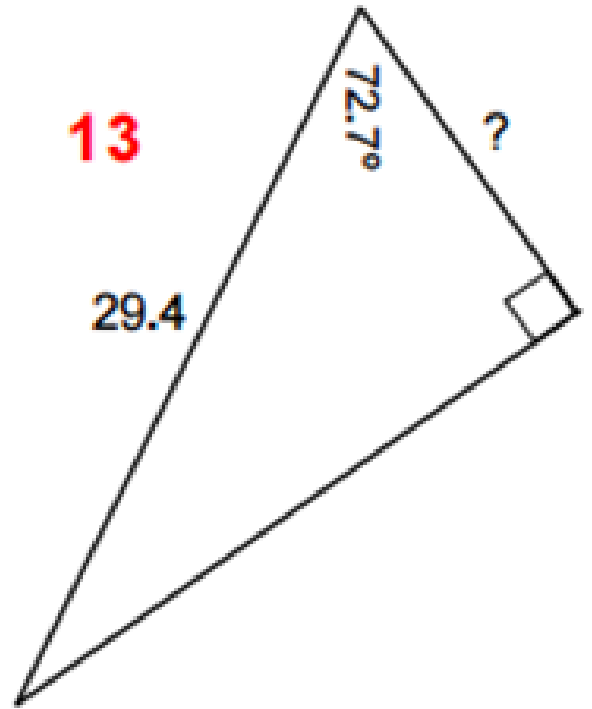
1

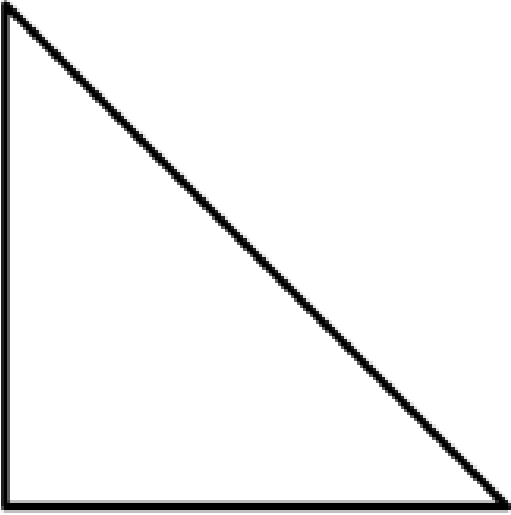


11



13





Your Turn:

Shelby is part of a group of volunteers who are helping with a forest inventory. She uses trigonometry to determine the height of trees that are too tall to measure. The top of a balsam fir tree makes an angle of about 65 with the ground at Shelby's feet. Shelby stands 25 m from the base of the tree. How tall is the tree, to the nearest meter?

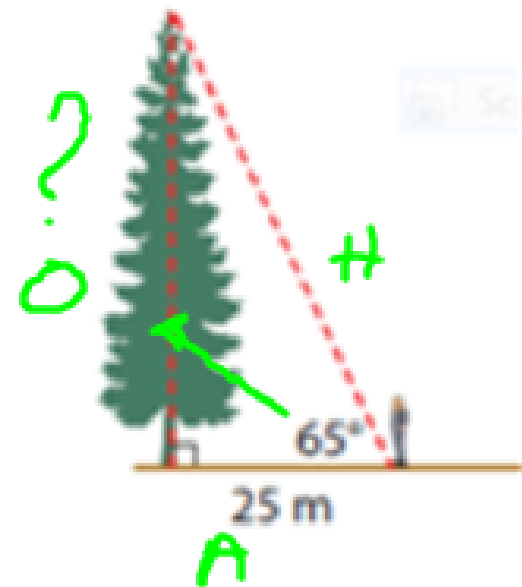
SOH CAH TOA

$$\tan \theta = \frac{O}{A}$$

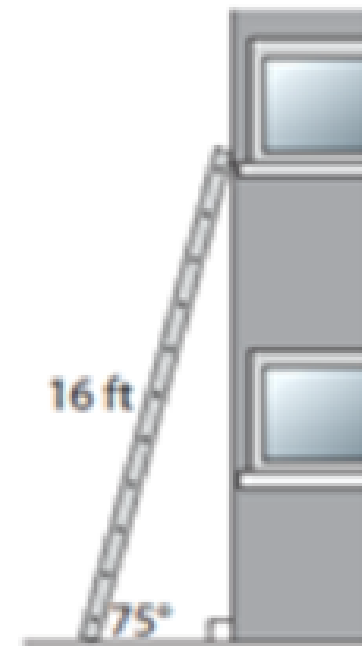
$$25 \cdot \tan 65 = \frac{x}{25} \cdot 25$$

$$25 (2.1445) = \frac{x}{25} \cdot 25$$

$$53.61 \text{ m} = x$$



A ladder should be placed at a 75° angle to the ground. Elijah has a 16 ft ladder that he wants to use while he repairs a window on the second storey of his house. How high can the ladder reach when used safely? Express your answer to the nearest foot.



Text Book
pg 312 # 1-4, 6

Text Book Work:

Page 312

1 - 6

Pythagorean Theorem Comp Check Tuesday!