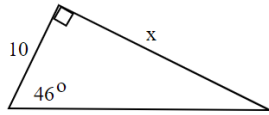


Trig Word Problems and Special Right Triangles

1.

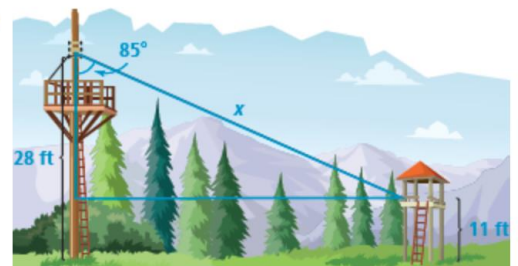
Find the value of x .



2. A skateboarding ramp is 13 inches high and rises at an angle of 19 degrees. How long is the base of the ramp? Round to the nearest inch.

3.

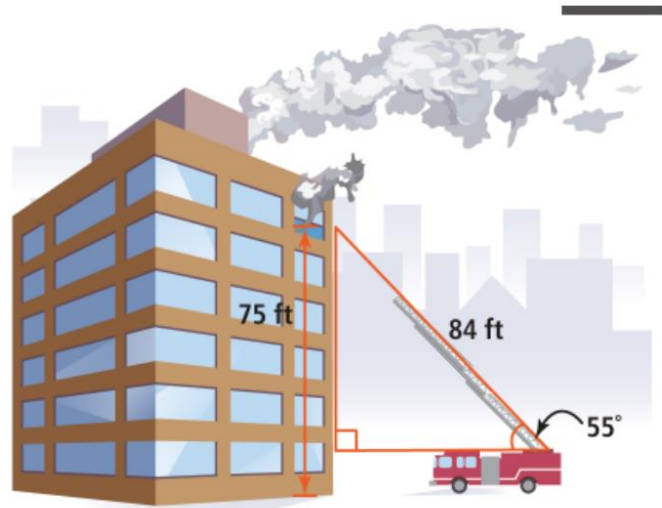
A zip line starts 28 feet in the air and ends 11 feet in the air. The zip line drops at an angle of 85° . How long is the zip line cable when completely taut (no rider)?



Example 5: Find a missing side length.

A fire truck has an 84 ft ladder extended against a building forming a 55° angle with the top of the truck. The truck is 8 ft tall. The firefighters are trying to reach a window that is 75 ft above the ground. Will they be able to reach the window using the ladder set at this angle?

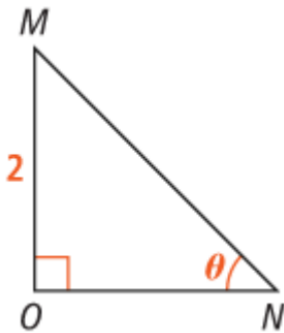
SOLUTION



Example 6: The sun shines at a 60° angle to the ground. How long is the shadow cast by a 20 foot tall flagpole?

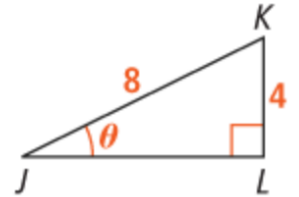
Example 7: $\triangle MNO$ is a $45^\circ - 45^\circ - 90^\circ$ triangle with side length $OM = 2$. Find the six trig ratios for angle θ .

$\sin\theta =$	$\cos\theta =$	$\tan\theta =$
$\csc\theta =$	$\sec\theta =$	$\cot\theta =$



B. $\triangle JKL$ is a 30° - 60° - 90° right triangle with side length $LK = 4$ and $m\angle J = 30^\circ$. What are the six trigonometric ratios for angle J with measure θ ?

This triangle is half of an equilateral triangle, so the length of the hypotenuse is twice the length of the shortest leg.



NEXT

$\sin\theta =$	$\cos\theta =$	$\tan\theta =$
$\csc\theta =$	$\sec\theta =$	$\cot\theta =$