



Name: \_\_\_\_\_

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Per: \_\_\_\_\_

## Section 3.1 – Examples

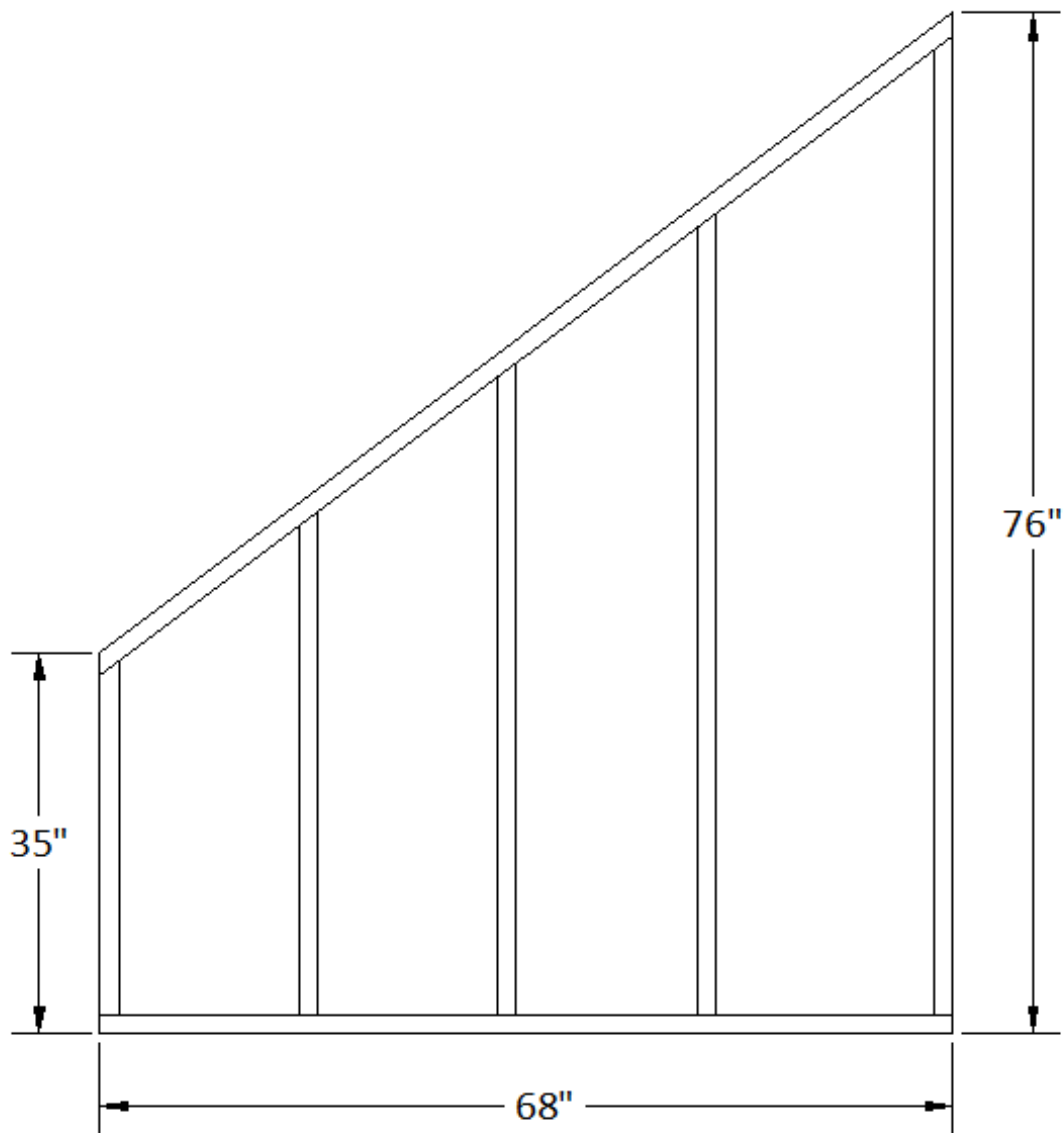
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### 3.1: Applications of the Pythagorean Theorem

- A. I can find the hypotenuse in a right triangle
- B. I can find the length of the leg in a right triangles
- C. I can use the Pythagorean Theorem to solve practical application problems

#### Example 1

Use the Pythagorean Theorem to calculate the length of the diagonal top plate for the wall. Hint: you have to add a right triangle to the picture to use the Pythagorean Theorem.



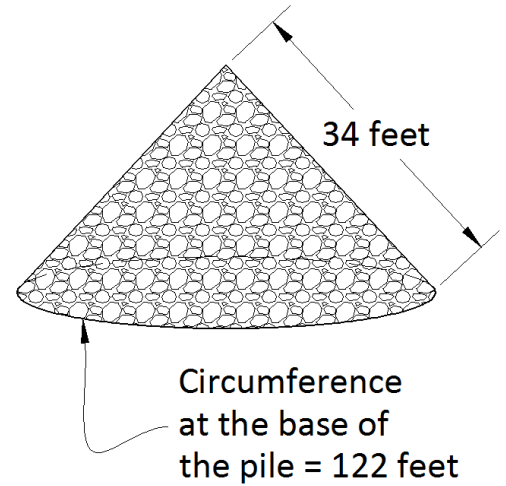
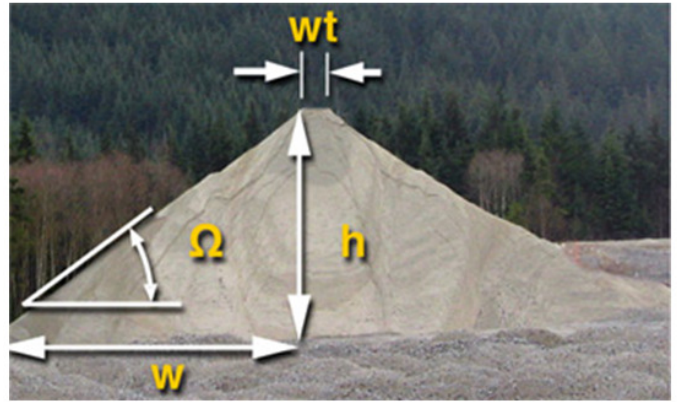
**Example 2**


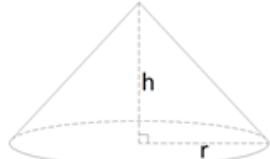
Calculate the volume of gravel in a conical pile in cubic yards.

The volume of a cone formula requires the measurement of the height and radius of the cone. Unfortunately, the gravel pile itself is in the way of these measurements.

The slant-height and circumference of the base can be measured, however, and the height and radius can be calculated using formulas.

Use the formula for the circumference of a circle to calculate the radius. Then use the Pythagorean Theorem to calculate the height.



Circle		$C = 2\pi r$ **for a circle, perimeter is renamed circumference since it is the measure of a curve	$A = \pi r^2$ $A = \frac{\pi d^2}{4}$ this formula can be used if the diameter (d) is known instead of the radius
Cone		$SA = \pi r^2 + \pi r \sqrt{r^2 + h^2}$	$V = \frac{1}{3} \pi r^2 h$