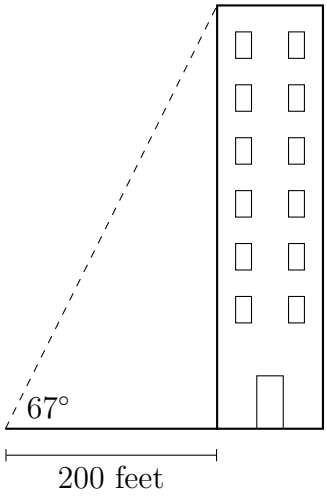
Name: _____

Note: When transforming expressions into equivalent forms, write a chain of equalities. Don't just write one expression after the next without stating the relationship between the expressions.

When solving equations, write down one equation after another. Do not cross out or write on top of an equation.

1. At a distance of 200 feet from the base of a building, the angle of elevation to the top of the building is 67 degrees. How tall is the building?



Solution: Let y be the height of the building. We have $\tan(67^\circ) = \frac{y}{200}$. Therefore $y = 200\tan(67^\circ) \approx 471.17$ feet.

There is another problem on the back of this page!

2. Convert the following angles to radians. You don't need to show any work, if you do the problem in your head. (Note: I am looking for the exact values. A decimal representation of a number is not exact, unless it goes on forever.)

   (a) 30°

   Solution: $\frac{\pi}{6}$

   (b) 90°

   Solution: $\frac{\pi}{2}$

   (c) 135°

   Solution: $\frac{3\pi}{4}$

   (d) 360°

   Solution: 2π