Ex 1:
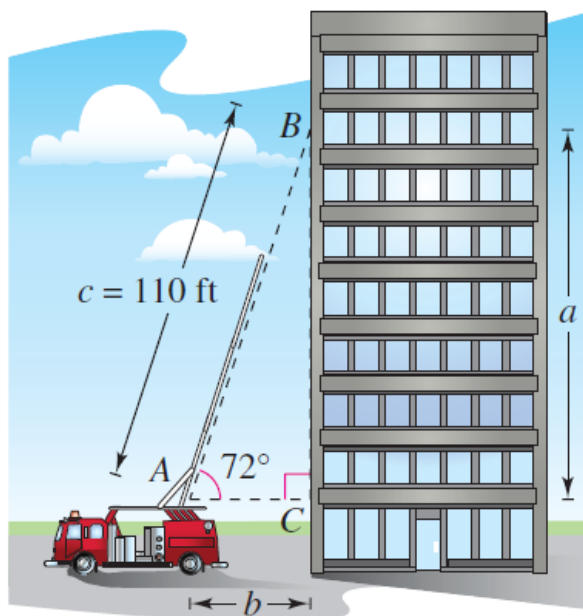
Solve the right triangle. What is the altitude (height) of the triangle?
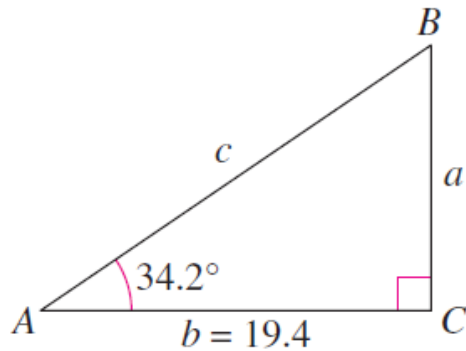
Ex 2:

A safety regulation states that the maximum angle of elevation for a rescue ladder is 72°. A fire department's longest ladder is 110 feet. What is the maximum safe rescue height?

Ex 3:

At a point 200 feet from the base of a building, the angle of elevation to the bottom of a smokestack is $35°$, whereas the angle of elevation to the top is $53°$. Find the height s of the smokestack alone.
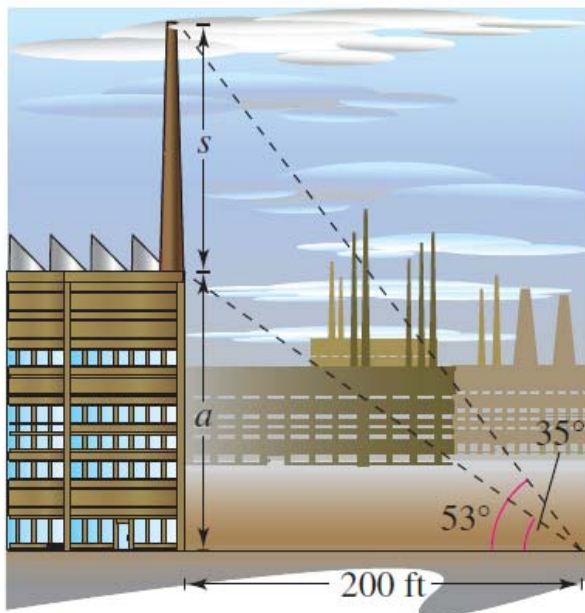
$$x^2 = 4 \quad \rightarrow \quad \sqrt{x^2} = \pm\sqrt{4} \quad \rightarrow \quad x = \pm 2$$

To isolate x, you take the square root of both sides of the equation.

Similarly, to isolate x in $\sin x = \dfrac{1}{2}$, you take the inverse sine of both sides of the equation.

$$\sin x = \frac{1}{2} \quad \rightarrow \quad \sin^{-1}(\sin x) = \sin^{-1}\left(\frac{1}{2}\right) \quad \rightarrow \quad x = \sin^{-1}\left(\frac{1}{2}\right)$$

Ex 4:

A swimming pool is 20 meters long and 12 meters wide. The bottom of the pool is slanted so that the water depth is 1.3 meters at the shallow end and 4 meters at the deep end. Find the angle of depression of the bottom of the pool.

Assignment 4.8A Pg. 359 Vocab # 1   Problem Set #'s 1-27 ODD