

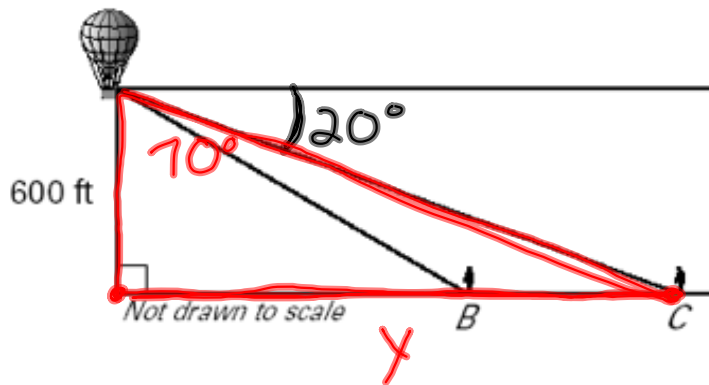
$$\tan 35 = \frac{x}{120}$$

$$x = 120 \cdot \tan 35$$

$$x = 84 \text{ ft}$$

The angle of depression from the top of a 320 foot office building to the top of a 200 foot office building is  $55^\circ$ . How far apart are the buildings?

You are in a hot air balloon that is 600 feet above the ground where you can see two people.



If the angle of depression from your line of sight to the person at  $B$  is  $30^\circ$ , how far is the person from the point on the ground below the hot air balloon?

$$\begin{aligned} \tan 60 &= \frac{x}{600} \\ x &= 600 \cdot \tan 60 \\ x &= 1039.2 \text{ ft} \end{aligned}$$

If the angle of depression from your line of sight to the person at  $C$  is  $20^\circ$ , how far is the person from the point on the ground below the hot air balloon?

$$\begin{aligned} \tan 70 &= \frac{x}{600} \\ x &= 600 \cdot \tan 70 \\ x &= 1648.5 \text{ ft} \end{aligned}$$

How far apart are the two people?

$$\begin{aligned} 1648.5 - 1039.2 \\ 609.3 \text{ ft} \end{aligned}$$