

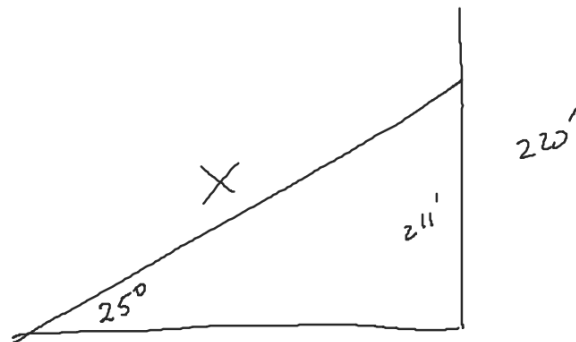
A radio transmission tower is 220 feet tall. How long should the guy wire be if this is to be attached 9 feet from the top and is to make an angle of 25° with the ground? Give your answer to the nearest foot.

$$\sin 25^\circ = \frac{211}{X}$$

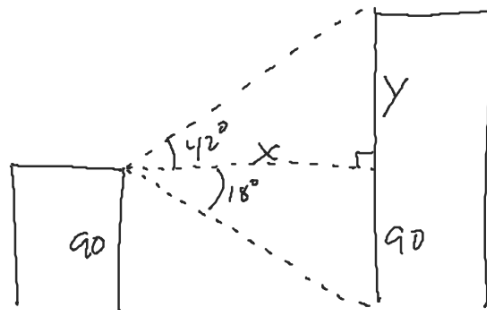
$$X = \frac{211}{\sin 25}$$

$$X = 499.2$$

499'



The angle of elevation from the top of a small building to the top of a nearby tall building is 42° , while the angle of depression to the bottom is 18° . If the small building is 90 feet high, find the height of the taller building.



$$\tan 18^\circ = \frac{90}{x}$$

$$\tan 42^\circ = \frac{y}{x} + 90$$