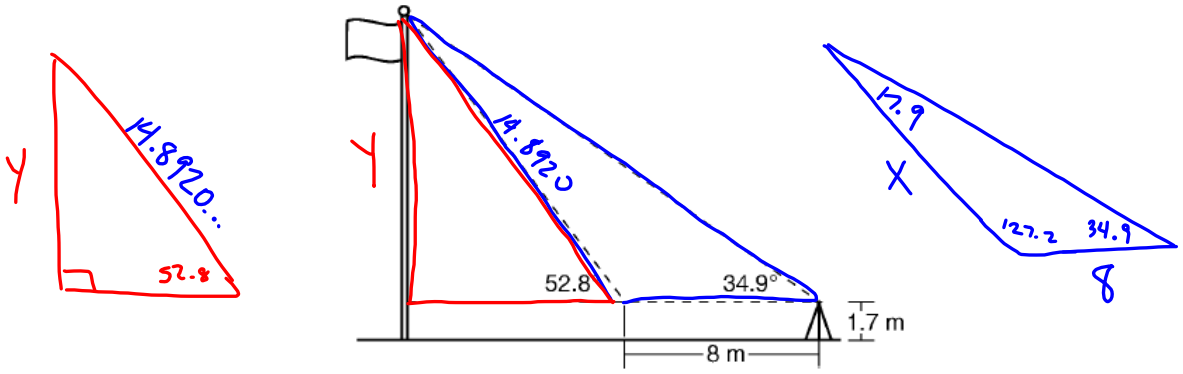
Cathy wants to determine the height of the flagpole shown in the diagram below. She uses a survey instrument to measure the angle of elevation to the top of the flagpole, and determines it to be 34.9D. She walks 8 meters closer and determines the new measure of the angle of elevation to be 52.8D. At each measurement, the survey instrument is 1.7 meters above the ground.



Determine and state, to the nearest tenth of a meter, the height of the flagpole. [*Show all work.*]

$$\frac{\sin 17.9}{8} = \frac{\sin 34.9}{x}$$

$$\frac{x(\sin 17.9)}{\sin 17.9} = \frac{8(\sin 34.9)}{\sin 17.9}$$

$$x = 14.8920\ldots$$

$$\sin 52.8 = \frac{y}{14.8920\ldots}$$

$$11.8619\ldots = y$$

$$+1.7$$

$$13.5619\ldots$$

13.6 m