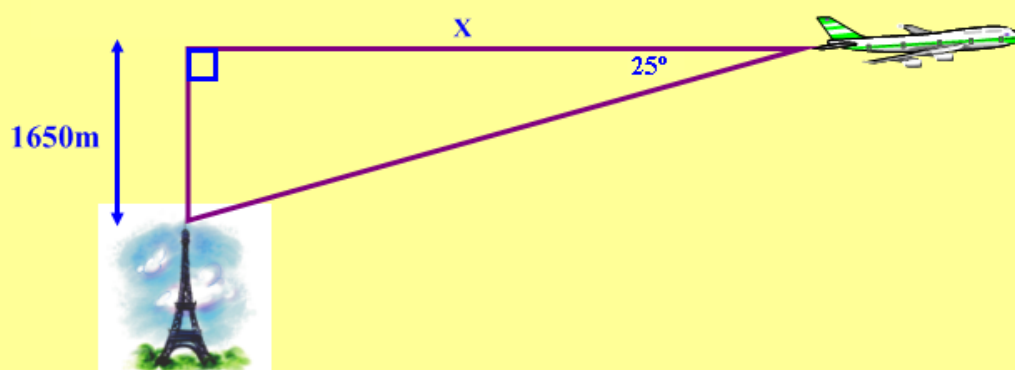


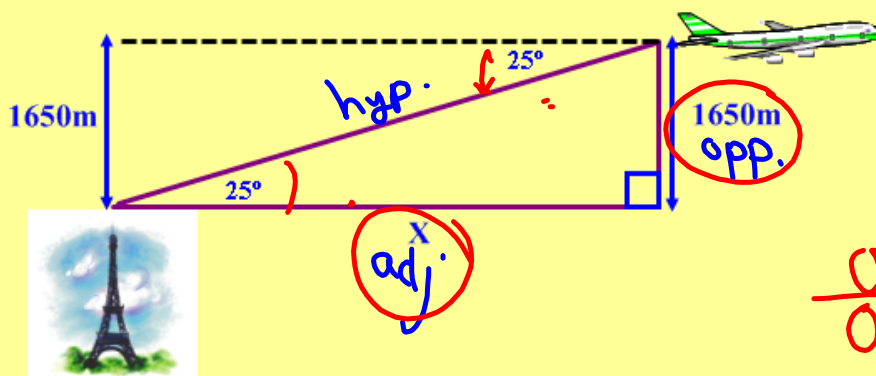
Warm Up Questions !!

- #1 The angle of depression from a plane in the air to the top of a tower is 25° . The altitude of the plane is 1650m higher than the top of the tower. What is the horizontal distance from the plane to the tower?



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$$\tan \theta = \frac{o}{a}$$

$$\tan 25^\circ = \frac{1650}{x}$$

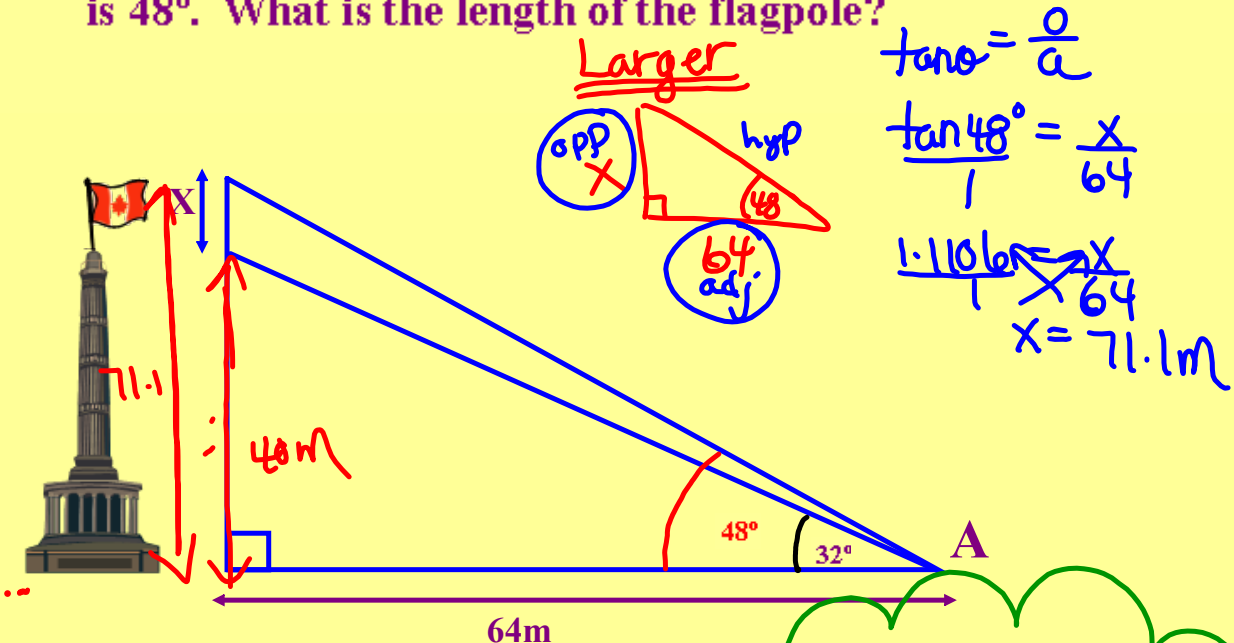
$$\frac{0.4663}{1} = \frac{1650}{x}$$

$$0.4663x = 1650$$

$$\frac{0.4663x}{0.4663} = \frac{1650}{0.4663}$$

$$x = 3538.49$$

#2 The angle of elevation to the top of a building from point A is 32° . Point A is located 64.0m from the base of the building. A flagpole is on the top of the building. The angle of elevation from point A to the top of the flagpole is 48° . What is the length of the flagpole?



$$\tan \theta = \frac{o}{a}$$

$$\frac{\tan 48^\circ}{1} = \frac{x}{64}$$

$$\frac{1.1106}{1} = \frac{x}{64}$$

$$x = 71.1m$$

Smaller

$$\tan \theta = \frac{o}{a}$$

$$\frac{\tan 32^\circ}{1} = \frac{x}{64}$$

$$\frac{0.6249}{1} = \frac{x}{64}$$

$$x = 40m$$

$71.1 - 40 = 31.1m$

Exam Question

A forest ranger in a tower 150m high sights two fires in the same line of sight with the angles of depression of 40 and 70 degrees. How far apart are the fires?

