



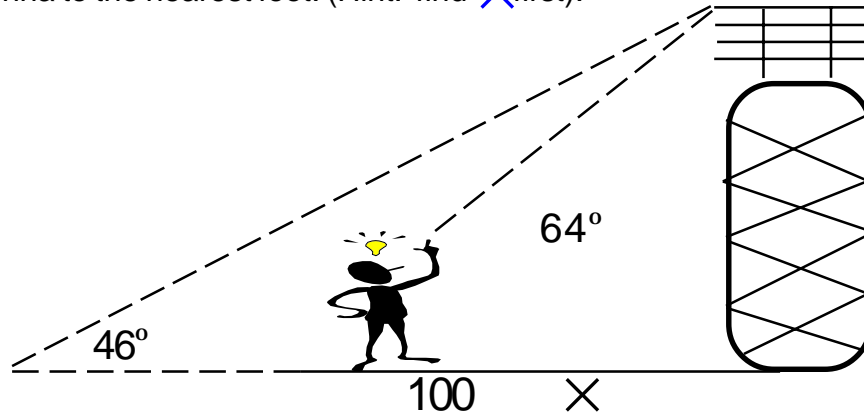
# Math Study Strategies

## Math for Air Traffic Control

### Angle of Elevation

#### **Problem:**

ANGLE OF ELEVATION: A man standing near a radio station antenna observes that the angle of elevation to the top of the antenna is 46 degrees. Find the height of the antenna to the nearest foot. (Hint: find  $\times$  first).



#### **Step # 1**

To find the height, use the property:

$$\tan = \frac{\text{opposite}}{\text{adjacent}}$$

$$\tan 64^\circ = \frac{h}{\times} \text{ and } \tan 46^\circ = \frac{h}{100\times}$$

#### **Step # 2**

We solve for:  $h$   $h = \times \tan 64^\circ$  and  $h = 46^\circ(100\times)$

#### **Step # 3**

Since height is the same  $h = h$  Therefore:  $\times \tan 64^\circ = \tan 46^\circ(100\times)$

#### **Step # 4**

Solve for  $\times$ :  $\times \tan 64^\circ - 100 \tan 46^\circ = 205$

#### **Step # 5**

Now we substitute the value to solve for  $h$

Since  $h$  is  $\times \tan 64^\circ = 104(\tan 64^\circ) \approx 212$  or

$$h = \tan 46^\circ(100 + \times)$$

$$h \approx 219$$

