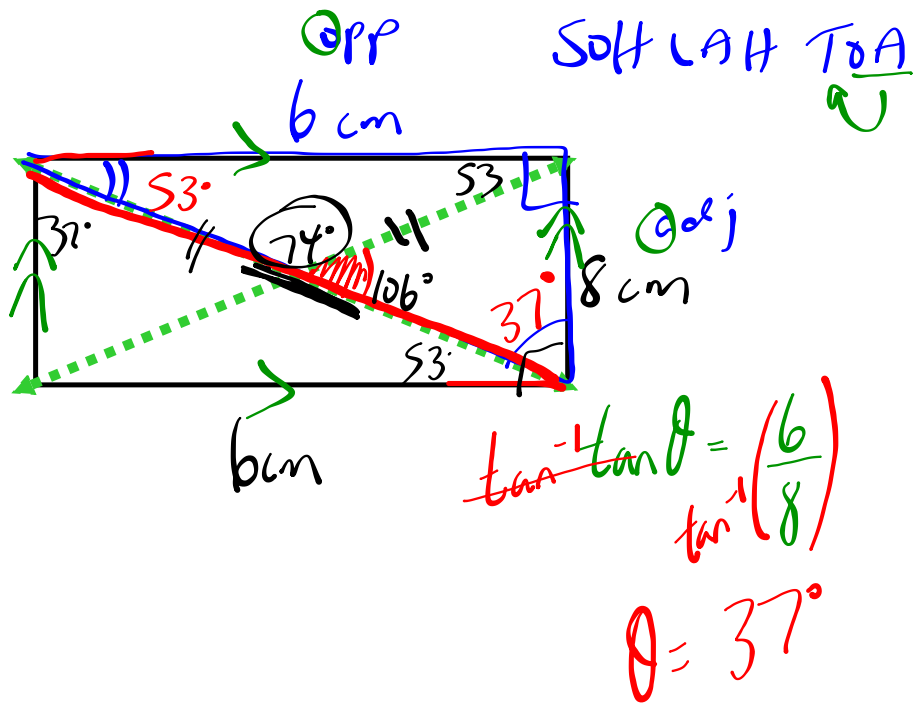
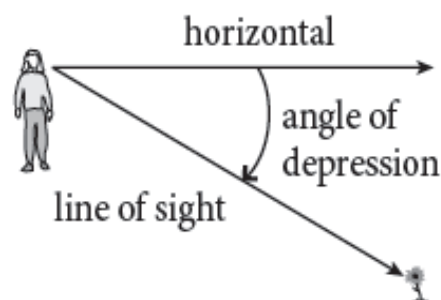
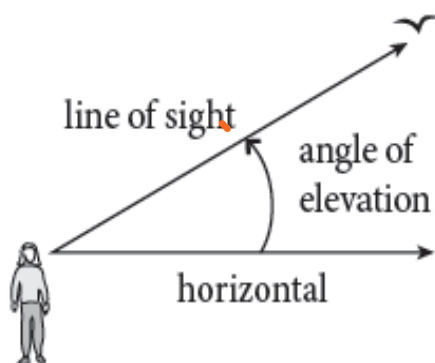


#10.
HW
Questions?



REMEMBER...

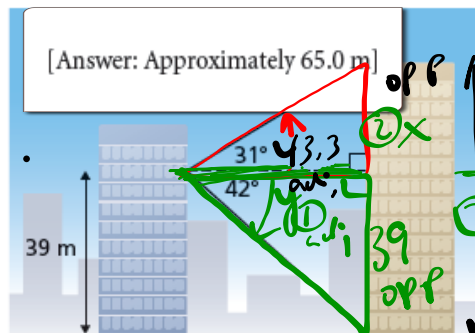
- An *angle of elevation* is measured from the horizontal upwards.
- An *angle of depression* is measured from the horizontal downwards.



YOUR TURN...

Warm Up

A surveyor stands at a window on the 9th floor of an office tower. He uses a clinometer to measure the angles of elevation and depression of the top and the base of a taller building. The surveyor sketches this plan of his measurements. Determine the height of the taller building to the nearest tenth of a metre.



① $\tan 42^\circ = \frac{39}{y}$

$y = \frac{39}{\tan 42^\circ}$

$y = 43.3$

② $\tan 31^\circ = \frac{x}{43.3}$

$43.3 \tan 31^\circ = x$

$26.0 = x$

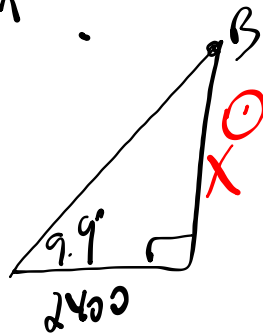
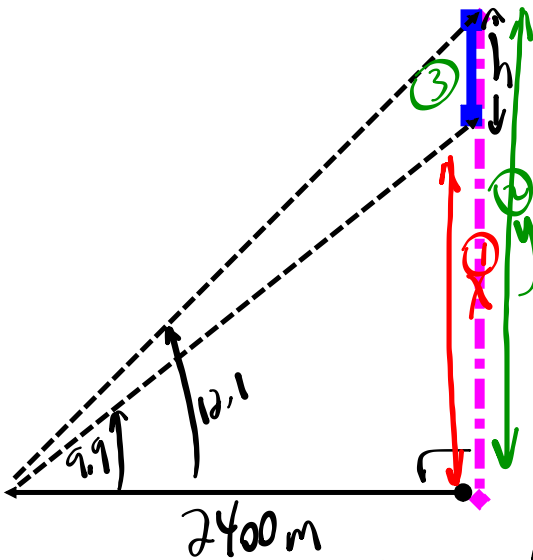
③ $h = 39 + 26$

65m

2.7 Solving Problems Involving More than One Right Triangle

EXAMPLE #2:

An antenna is on the top of the CN Tower in Toronto. From a point 2400 m away, the angles of elevation to the top and bottom of the antenna are 12.1° and 9.9° respectively. How tall is the antenna?



$$\tan 9.9^\circ = \frac{x}{2400}$$

$$2400 \tan 9.9^\circ = x$$

$$418.9 = x$$



$$\tan 12.1^\circ = \frac{y}{2400}$$

$$2400 \tan 12.1^\circ = y$$

$$514.5 = y$$

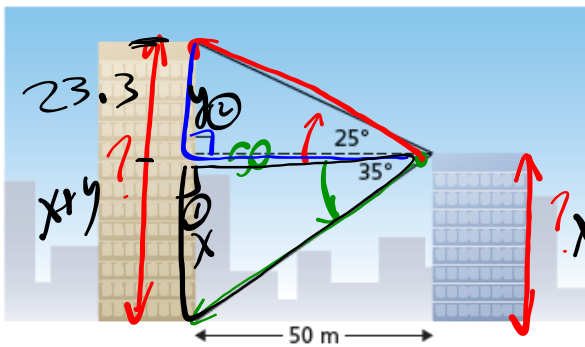
$$\textcircled{3} h = y - x$$

$$h = 514.5 - 418.9$$

$$95.6 \text{ m}$$

EXAMPLE #3:

9. Two office towers are 50 m apart. From the top of the shorter tower, the angle of depression of the base of the taller tower is 35° . The angle of elevation of the top of this tower is 25° . Determine the height of each tower to the nearest metre.



9. 35 m, 58 m

① $\tan 35^\circ = \frac{x}{50}$
 $50 \tan 35^\circ = x$
 $35.0 \text{ m} = x$

② $\tan 25^\circ = \frac{y}{50}$
 $50 \tan 25^\circ = y$
 $23.3 = y$

③ $h = 23.3 + 35$
 $h = 58.3 \text{ m}$

2.7 Solving Problems Involving More than One Right Triangle

HW Mr. H → #5, #6, #7
Worksheet - Applications.pdf #10, #11

Mrs. Moody → #8 ace
#9, 10, 12, 14

Attachments

Worksheet - Applications.pdf