

Feb. 10, 2014

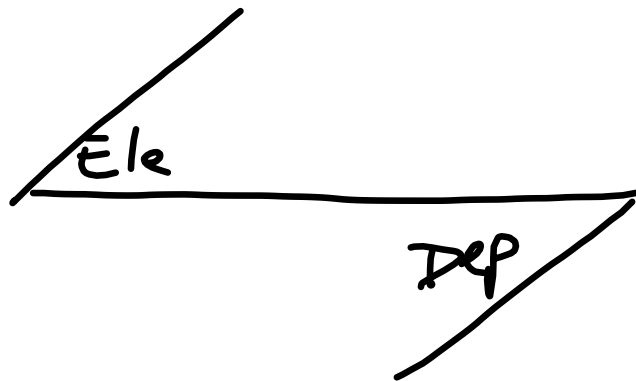
Sect. 1-4

Right  $\Delta$  Applications

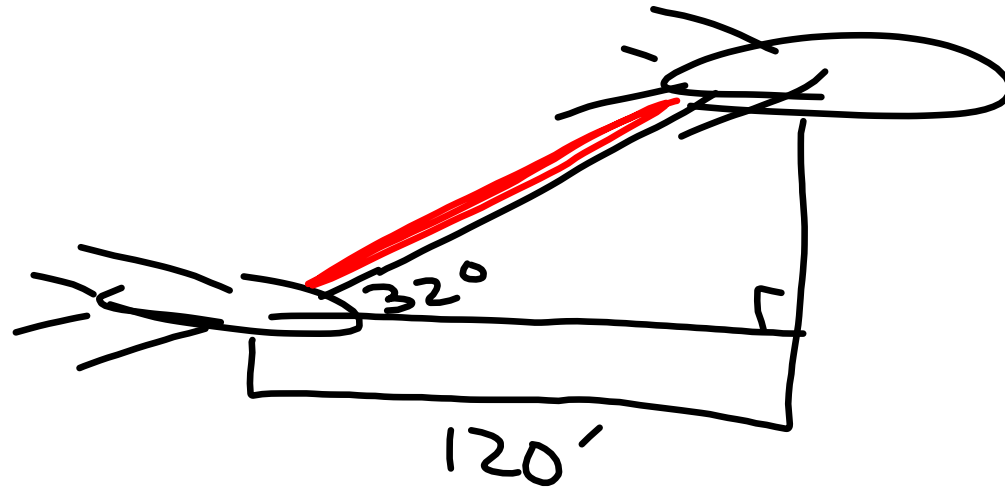
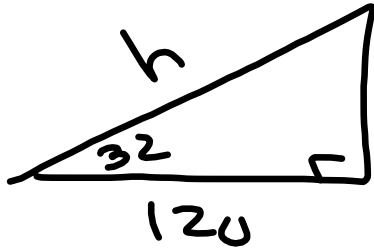
# Vocab

Angle of Elevation  
of Depression

Both reference the horizontal



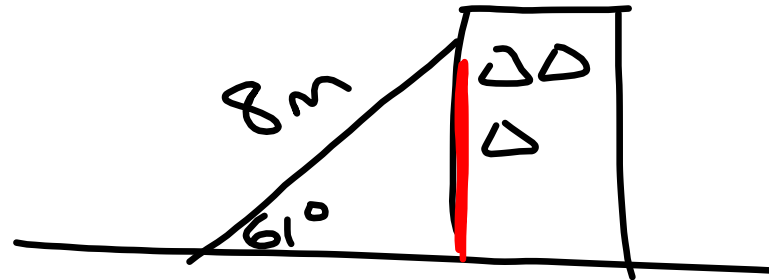
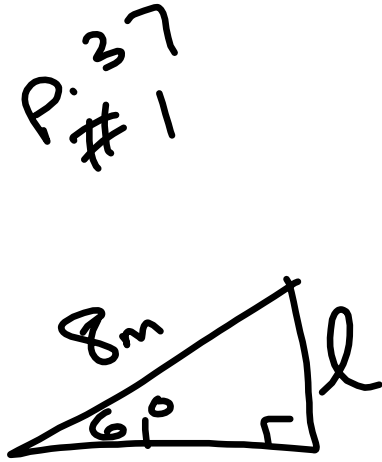
Ex. 2  
p. 34



$$\cos 32^\circ = \frac{120}{h}$$

$$h = \frac{120}{\cos 32^\circ}$$

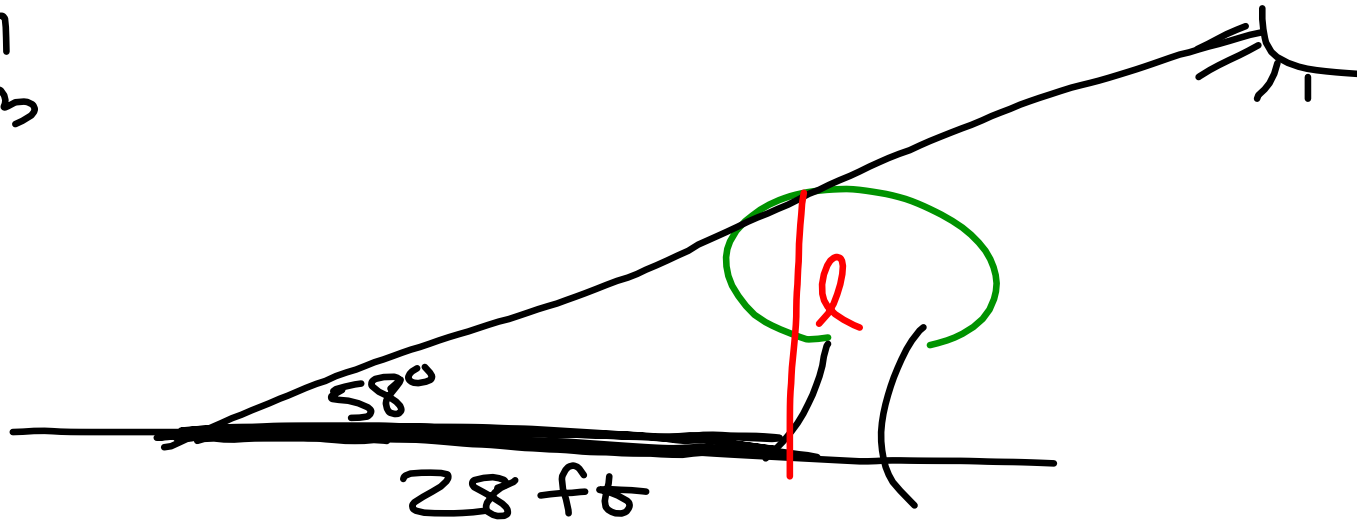
$$h = 141.5 \text{ ft}$$



$$\sin 61^\circ = \frac{l}{8}$$

$$l = 8 \sin 61^\circ$$

$$l \approx 6.996 \text{ m}$$

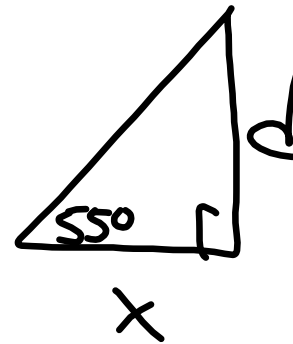
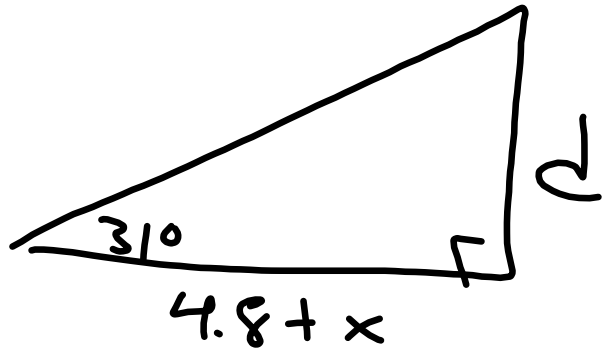
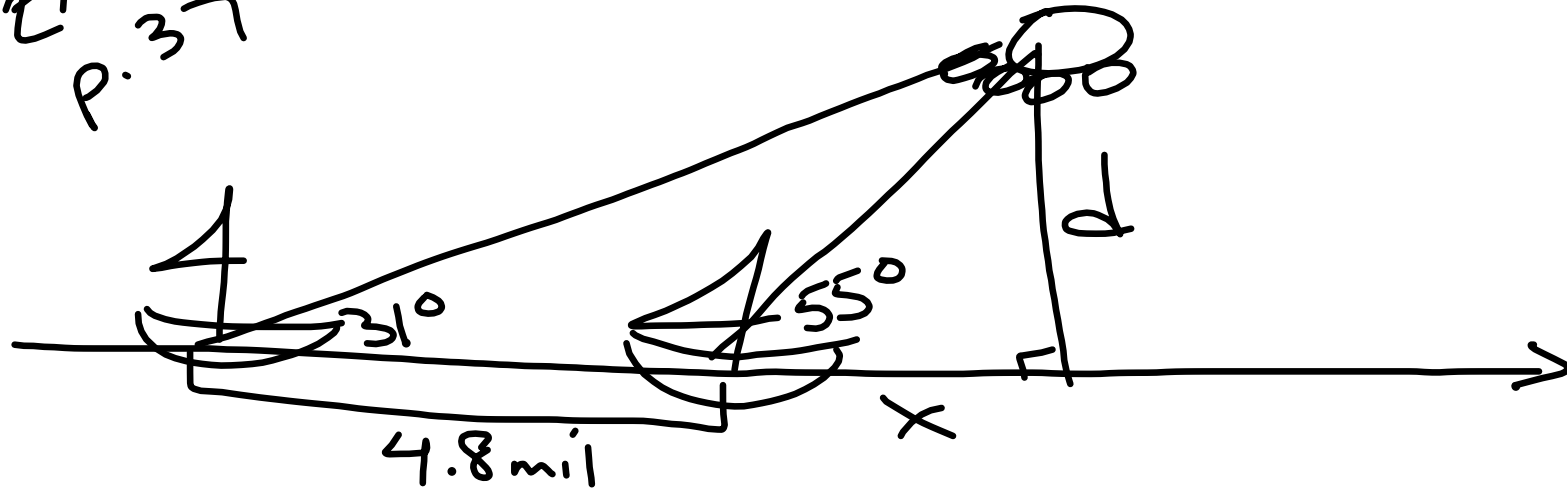
p. 37  
# 3

$$\tan 58^\circ = \frac{l}{28}$$

$$l = 28 \tan 58^\circ$$

$$l \approx 44.8 \text{ ft}$$

Ex. 4  
p. 37



$$\tan 31^\circ = \frac{d}{4.8 + x}$$

$$\tan 55^\circ = \frac{d}{x}$$

$$\tan 31^\circ = \frac{d}{\left(4.8 + \frac{d}{\tan 55^\circ}\right)}$$

$$d = x \tan 55^\circ$$

$$x = \frac{d}{\tan 55^\circ}$$

$$\tan 31^\circ \left(4.8 + \frac{d}{\tan 55^\circ}\right) = d$$

$$4.8 \tan 31^\circ + d \frac{\tan 31^\circ}{\tan 55^\circ} = d$$

$$4.8 \tan 31^\circ = d - d \frac{\tan 31^\circ}{\tan 55^\circ} \Rightarrow 4.8 \tan 31^\circ = d \left(1 - \frac{\tan 31^\circ}{\tan 55^\circ}\right)$$

$$d = \frac{4.8 \tan 31^\circ}{\left(1 - \frac{\tan 31^\circ}{\tan 55^\circ}\right)} \approx 4.97 \text{ miles}$$