TEST (Chapters 3 + 4)

- Right Angle Trig (SOHCAHTOA)

$$\sin\theta = \frac{opp}{hyp} \qquad \cos\theta = \frac{adj}{hyp} \qquad \tan\theta = \frac{opp}{adj}$$

- Law of Sines $\frac{a}{\sin A} = \frac{b}{\sin B} = \frac{c}{\sin C}$

- Law of Cosines $c^2 = a^2 + b^2 - 2ab\cos C$

- Trig ratios of Obtuse Angles

$$\sin\theta = \sin(180^\circ - \theta)$$
$$\cos\theta = -\cos(180^\circ - \theta)$$
$$\tan\theta = -\tan(180^\circ - \theta)$$

- Ambiguous case of Law of Sines (SSA)
  - geostrip activity
  - Donkey sheet

- Practical Applications

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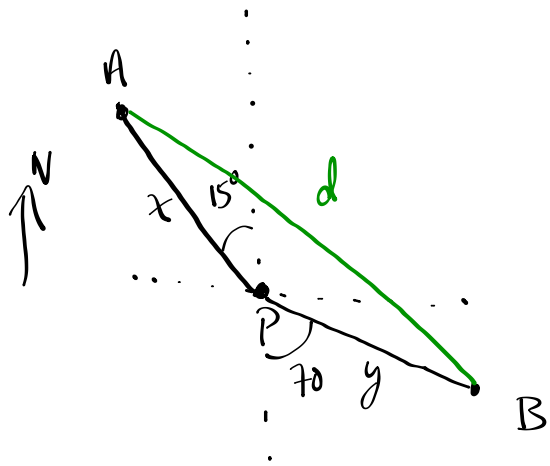
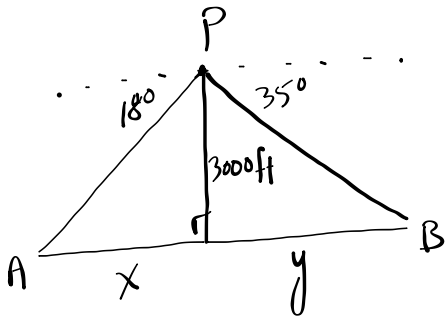
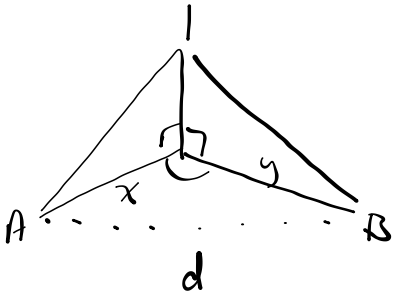
8.

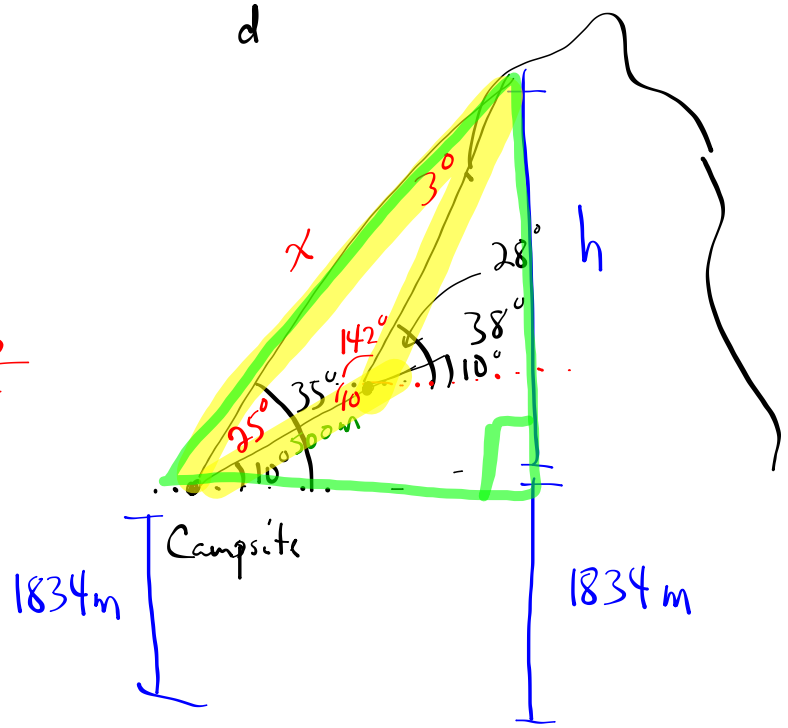






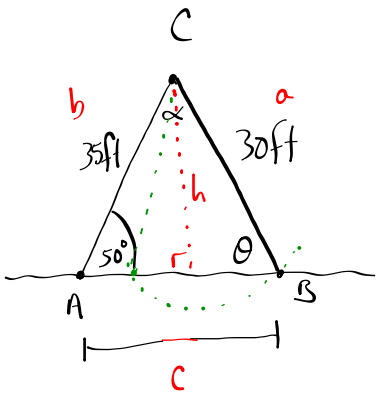
11.

152
25
177



Chapter 4 - Self Test (p198)

3.



① Find the height.

$\sin 50° = \frac{h}{35}$

$h = 35 \sin 50°$

$h = 26.8$ ft

Since $h < a < b$ two triangles can be formed.

Situation 1

$\frac{\sin 50°}{30} = \frac{\sin \theta}{35}$

$\sin \theta = \frac{35 \sin 50}{30}$

$\theta = 63.3°$ (or $116.7°$)

$\alpha = 180° - (63.3° + 50°)$

$\alpha = 66.7°$

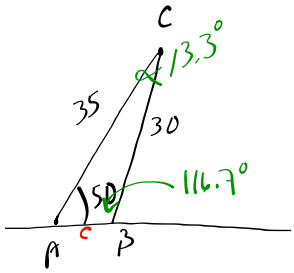
$\frac{30}{\sin 50°} = \frac{c}{\sin 66.7°}$

$c = \frac{30(\sin 66.7°)}{\sin 50°}$

$c = 36$ ft

Situation 2

SITUATION 2



$\alpha = 180° - (50 + 116.7°)$

$\alpha = 13.3°$

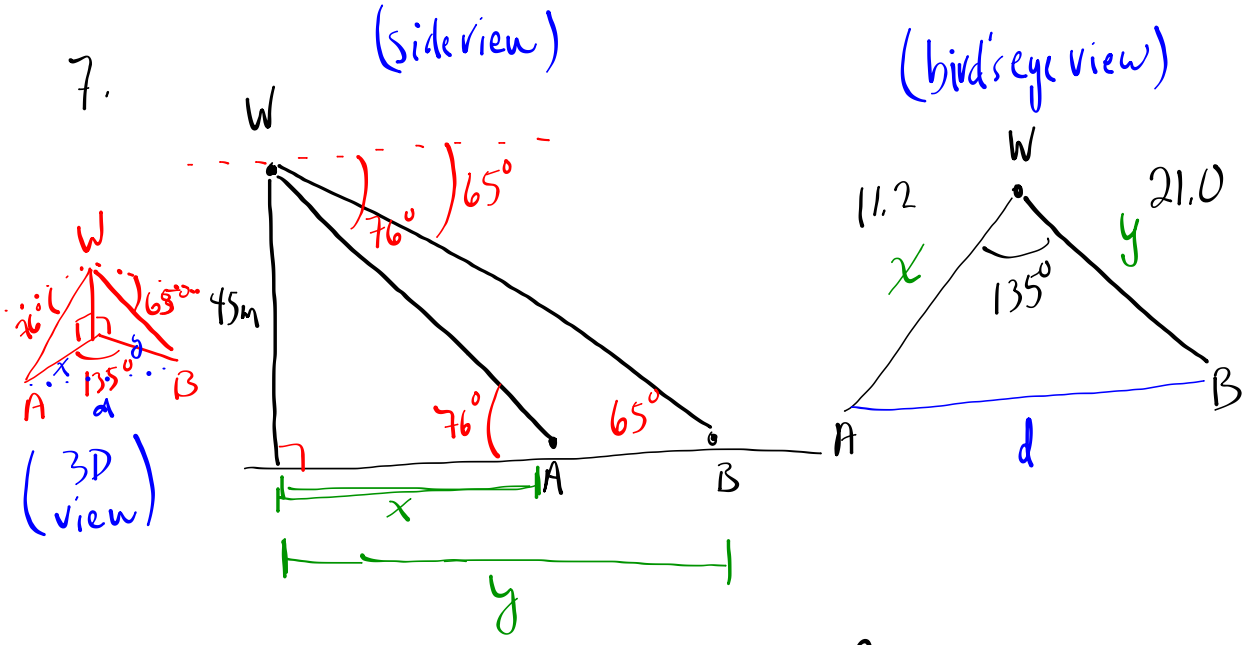
$\frac{30}{\sin 50} = \frac{c}{\sin 13.3°}$

$c = \frac{30 \sin 13.3°}{\sin 50}$

$c = 9$ ft

The workers are standing either 36ft or 9ft apart.

7.



To find x:

$$\tan 76^\circ = \frac{45}{x}$$

$$x \tan 76^\circ = 45$$

$$x = \frac{45}{\tan 76^\circ}$$

$$x = 11.2 \text{ m}$$

To find y:

$$\tan 65^\circ = \frac{45}{y}$$

$$y = \frac{45}{\tan 65^\circ}$$

$$y = 21.0$$