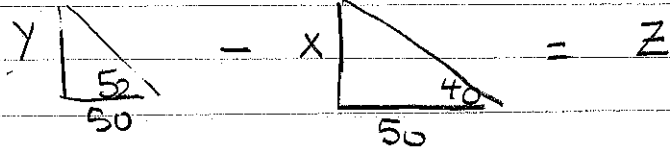
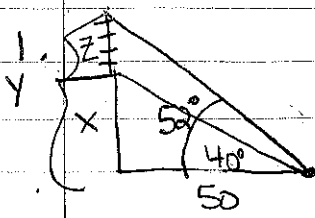


Right Δ WS II



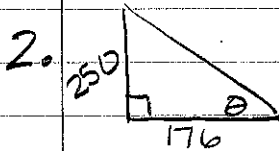
$$\tan 52 = \frac{y}{50} \quad \tan 40 = \frac{x}{50}$$

$$y = 64.0 \quad x = 42.0$$

$$64 - 42 = 22 \text{ ft}$$

a.) 42 ft \leftarrow building

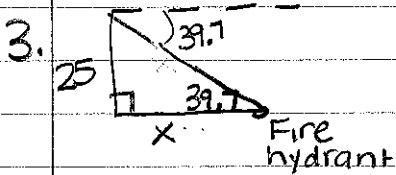
b.) 22 ft \leftarrow antenna



$$\tan \theta = \frac{250}{176}$$

$$\theta = \tan^{-1}\left(\frac{250}{176}\right)$$

$$\theta = 54.9^\circ$$

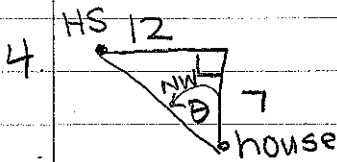


$$\tan 39.7 = \frac{25}{x}$$

$$x \tan 39.7 = 25$$

$$x = \frac{25}{\tan 39.7}$$

$$x = 30.1 \text{ ft}$$



$$\tan \theta = \frac{12}{7}$$

$$\theta = \tan^{-1}\left(\frac{12}{7}\right)$$

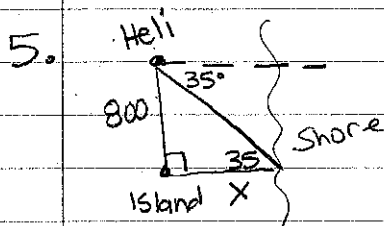
$$\theta = 59.7^\circ$$

$$N 59.7^\circ W$$

or

$$90 - 59.7 = 30.3$$

$$W 30.3^\circ N \leftarrow \text{awkward}$$



$$\tan 35 = \frac{800}{x}$$

$$x \tan 35 = 800$$

$$x = \frac{800}{\tan 35}$$

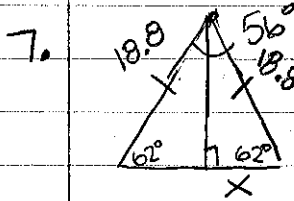
$$x = 1142.5 \text{ ft}$$



$$\sin \theta = \frac{10}{20}$$

$$\theta = \sin^{-1}\left(\frac{10}{20}\right)$$

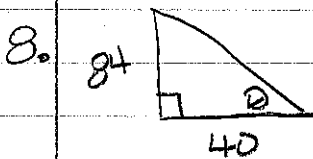
$$\theta = \boxed{30^\circ}$$



b.) $180 - 62 - 62 = \boxed{56^\circ}$

a.) $\cos 62^\circ = \frac{x}{18.8}$

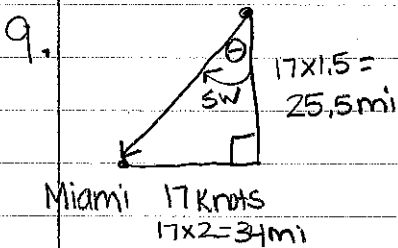
$$x = 8.8(2) = \boxed{17.7 \text{ cm}} \text{ or } \boxed{17.6 \text{ cm}}$$



$$\tan \theta = \frac{84}{40}$$

$$\theta = \tan^{-1}\left(\frac{84}{40}\right)$$

$$\theta = \boxed{64.5^\circ}$$



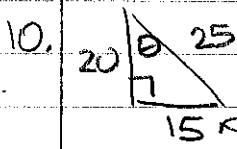
$$\tan \theta = \frac{34}{25.5}$$

$$\theta = \tan^{-1}\left(\frac{34}{25.5}\right)$$

$$\theta = 53.1^\circ$$

$$\boxed{S 53.1^\circ W}$$

or
 $90 - 53.1 = 36.9$
 $W 36.9^\circ S$ ← Awkward



$$20^2 + b^2 = 25^2$$

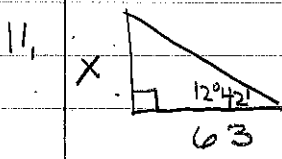
$$b^2 = 225$$

$$b = 15$$

$$\tan \theta = \frac{15}{20}$$

$$\theta = \tan^{-1}\left(\frac{15}{20}\right)$$

$$\theta = \boxed{36.9^\circ}$$



$$\tan 12^\circ 42' = \frac{x}{63}$$

$$\boxed{x = 14.2 \text{ ft}}$$



$\frac{74}{2} = 37^\circ$ (each bisected angle @ vertex)

$\cos 37^\circ = \frac{x}{17}$

$x = 13.6 \text{ in}$

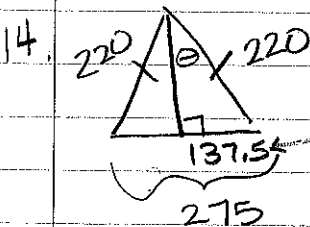


$\sin 20.4 = \frac{4}{x}$

$x \sin 20.4 = 4$

$x = \frac{4}{\sin 20.4}$

$x = 11.5 \text{ ft}$



$\frac{275}{2} = 137.5$

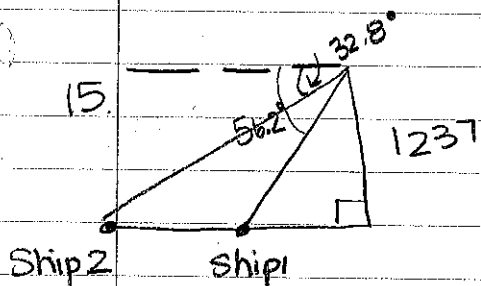
$\sin \theta = \frac{137.5}{220}$

$\theta = \sin^{-1} \left(\frac{137.5}{220} \right)$

$\theta = 38.7^\circ$

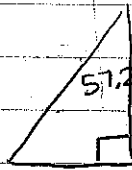
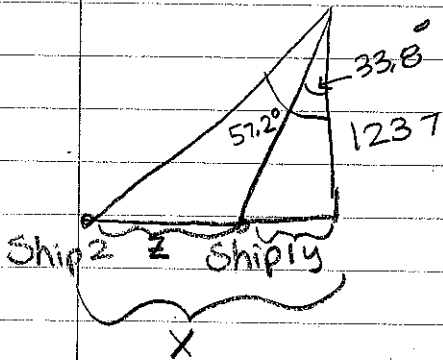
$\times 2$

77.4°



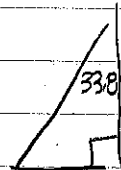
$\begin{array}{r} 90 \\ - 32.8 \\ \hline 57.2 \end{array}$

$\begin{array}{r} 90 \\ - 56.2 \\ \hline 33.8 \end{array}$



$\tan 57.2 = \frac{x}{1237}$

$x = 1919.4$

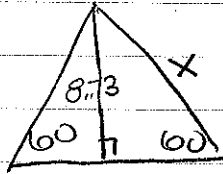


$\tan 33.8 = \frac{y}{1237}$

$y = 828.1$

$1919.4 - 828.1 = 1091.3 \text{ ft}$

16.



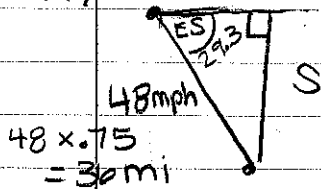
$$\sin 60 = \frac{8.73}{x}$$

$$x \sin 60 = 8.73$$

$$x = \frac{8.73}{\sin 60}$$

$$x = 10.1 \times 3 = \boxed{30.3 \text{ in}}$$

17. camp E



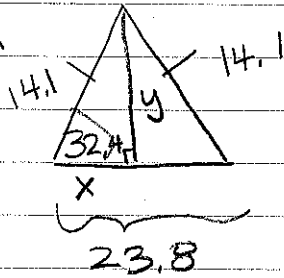
$$\cos 29.3 = \frac{E}{36}$$

$$\boxed{E = 31.4 \text{ mi}}$$

$$\sin 29.3 = \frac{S}{36}$$

$$\boxed{S = 17.6 \text{ mi}}$$

18.



$$\cos 32.4 = \frac{x}{14.1}$$

$$11.9 = x$$

$$11.9 (2) = 23.8 \text{ (base)}$$

$$\sin 32.4 = \frac{y}{14.1}$$

$$y = 7.6 \text{ (altitude/height)}$$

$$A = \frac{1}{2} bh$$

$$A = \frac{1}{2} (23.8)(7.6)$$

$$= 90.4 \text{ cm}^2$$