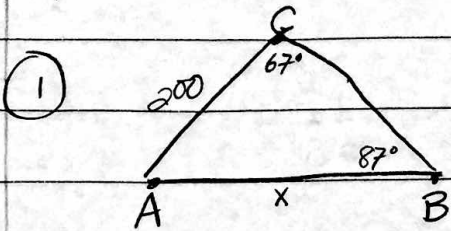
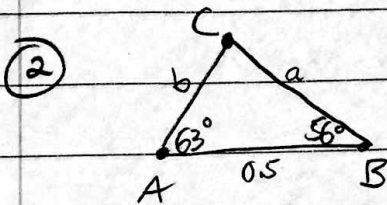


Applications - Laws of Sines + Cosines



$$\frac{\sin 67^\circ}{x} = \frac{\sin 87^\circ}{200}$$

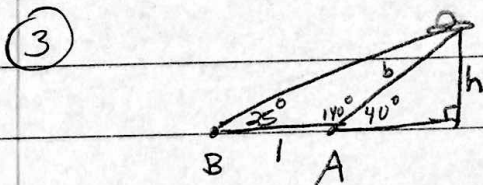
$$x = 184.35 \text{ yd}$$



$$\frac{\sin 56^\circ}{b} = \frac{\sin 63^\circ}{a} = \frac{\sin 61^\circ}{0.5}$$

$$b = .474 \text{ mi}$$

$$a = .509 \text{ mi}$$

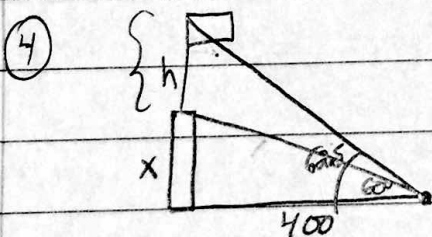


$$\frac{\sin 25^\circ}{b} = \frac{\sin 15^\circ}{1}$$

$$\sin 40^\circ = \frac{h}{1.633}$$

$$h = 1.05 \text{ mi}$$

$$b = 1.633 \text{ mi}$$

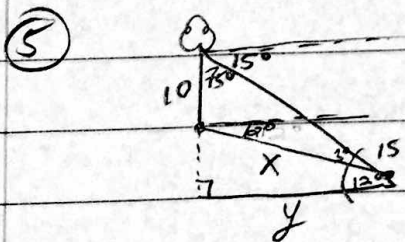


$$\tan 60^\circ = \frac{x}{400}$$

$$x = 692.82 \text{ ft.}$$

$$\tan 62.5^\circ = \frac{692.82 + h}{400}$$

$$h = 75.573 \text{ ft.}$$

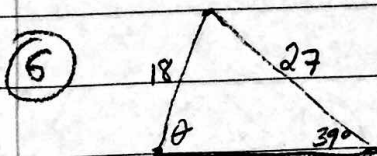


$$\frac{\sin 3^\circ}{10} = \frac{\sin 75^\circ}{x}$$

$$x = 184.56 \text{ ft.}$$

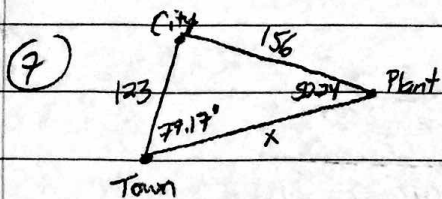
$$\cos 12^\circ = \frac{y}{184.56}$$

$$y = 180.53 \text{ ft.}$$



$$\frac{\sin 39^\circ}{18} = \frac{\sin \theta}{27}$$

$$\theta = 70.73^\circ$$



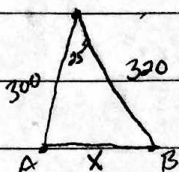
$$\frac{\sin 77.17^\circ}{156} = \frac{\sin \text{Plant}}{123}$$

$$\frac{\sin 77.17^\circ}{156} = \frac{\sin 50.5^\circ}{x}$$

Plant angle = 50.24°

$x = 127.08 \text{ km}$

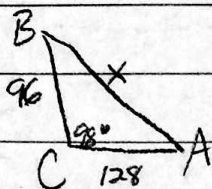
(8)



$$x^2 = 300^2 + 320^2 - 2(300)(320)\cos 25^\circ$$

$x = 135.61 \text{ ft}$

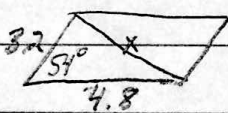
(9)



$$x^2 = 96^2 + 128^2 - 2(96)(128)\cos 98^\circ$$

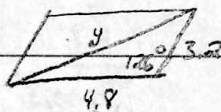
$x = 170.35 \text{ m}$

(10)



$$x^2 = 4.8^2 + 3.2^2 - 2(4.8)(3.2)\cos 54^\circ$$

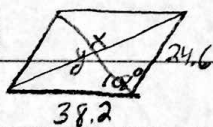
$x = 3.902$



$$y^2 = 4.8^2 + 3.2^2 - 2(4.8)(3.2)\cos 126^\circ$$

$y = 7.16$

(11)



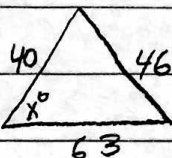
$$x^2 = 38.2^2 + 24.6^2 - 2(38.2)(24.6)\cos 108^\circ$$

$x = 51.43 \text{ in}$

$$y^2 = 38.2^2 + 24.6^2 - 2(38.2)(24.6)\cos 72^\circ$$

$y = 38.52 \text{ in}$

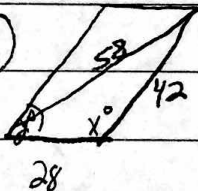
(12)



$$46^2 = 40^2 + 63^2 - 2(40)(63)\cos x^\circ$$

$x = 46.755^\circ$

(13)

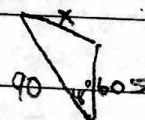
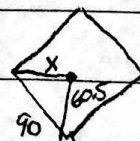


$$58^2 = 42^2 + 28^2 - 2(42)(28)\cos x^\circ$$

$x = 110.3^\circ$

$y = 69.7^\circ$

(14)



$$x^2 = 90^2 + 60.5^2 - 2(90)(60.5)\cos 45^\circ$$

$x = 63.72 \text{ ft}$