

$$m\angle E = 42.3$$

$$\begin{aligned} m\angle F &= 180 - 36 - 42.3 \\ &= 101.7^\circ \end{aligned}$$

$$DE =$$

$$\frac{DE}{\sin 101.7} = \frac{62}{\sin 36}$$

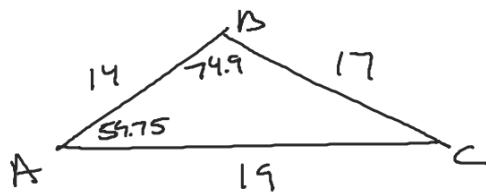
$$\begin{aligned} DE &= \frac{62 \sin 101.7}{\sin 36} \\ &= 103.3 \end{aligned}$$

$$62 \sin E = 71 \sin 36$$

$$\sin E = \frac{71 \sin 36}{62}$$

$$\sin^{-1}\left(\frac{71 \sin 36}{62}\right) = 42.3$$

(6)



$$\frac{19}{\sin 74.9} = \frac{17}{\sin A}$$

$$19 \sin A = 17 \sin 74.9$$

$$\sin A = \frac{17 \sin 74.9}{19}$$

$$b^2 = a^2 + c^2 - 2ac \cos B$$

$$19^2 = 17^2 + 14^2 - 2(17)(14) \cos B$$

$$361 = 289 + 196 - 476 \cos B$$

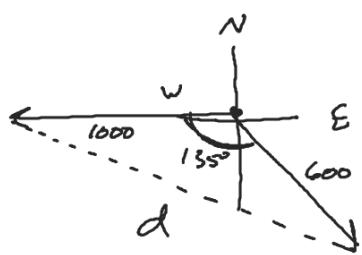
$$361 = 485 - 476 \cos B$$

$$-124 = -476 \cos B$$

$$\cos B = \frac{124}{476}$$

$$\cos^{-1}\left(\frac{124}{476}\right) = m\angle B$$
$$m\angle B = 74.9^\circ$$

8)

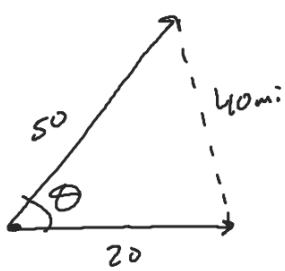


$$c^2 = b^2 + c^2 - 2bc \cos A$$

$$= 1000^2 + 600^2 - 2(1000)(600) \cos 135^\circ$$

$$= 1486.1 \text{ km}$$

9)



$$40^2 = 50^2 + 20^2 - 2(50)(20) \cos \theta$$

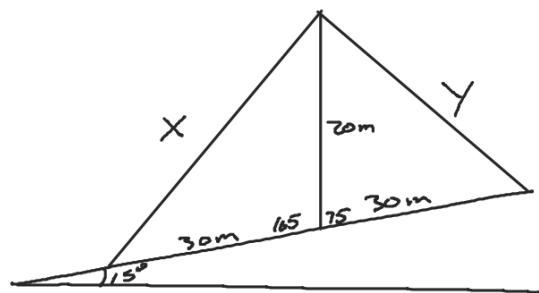
$$1600 = 2500 + 400 - 200 \cos \theta$$

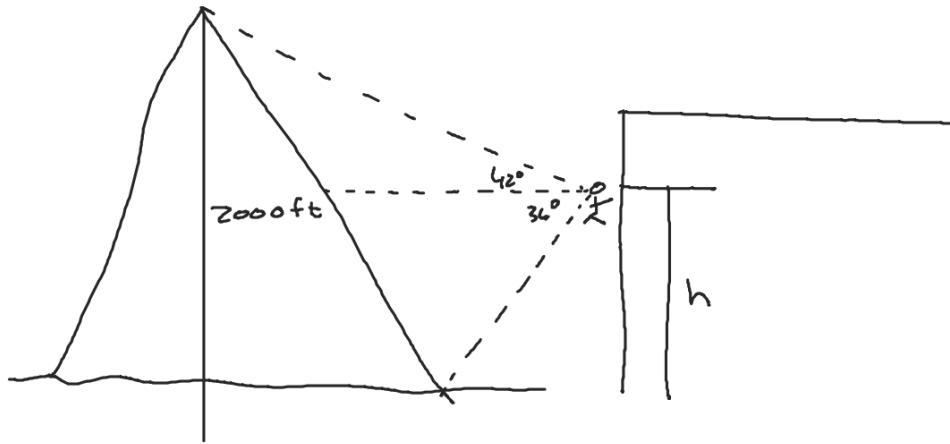
$$1600 = 2900 - 2000 \cos \theta$$

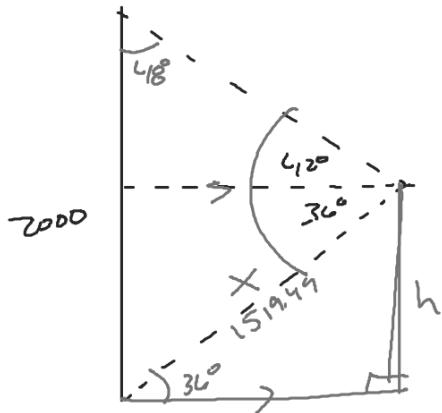
$$-1300 = -2000 \cos \theta$$

$$\cos \theta = \frac{1300}{2000}$$

$$\cos^{-1} \left( \frac{1300}{2000} \right) = 49.45^\circ$$







$$\frac{2000}{\sin 78} = \frac{x}{\sin 48}$$

$$x = \frac{2000 \sin 48}{\sin 78}$$

$$= 1519.49$$

$$\sin 36^\circ = \frac{h}{1519.49}$$

$$h = 1519.49 \sin 36^\circ \\ = 893 \text{ ft}$$

