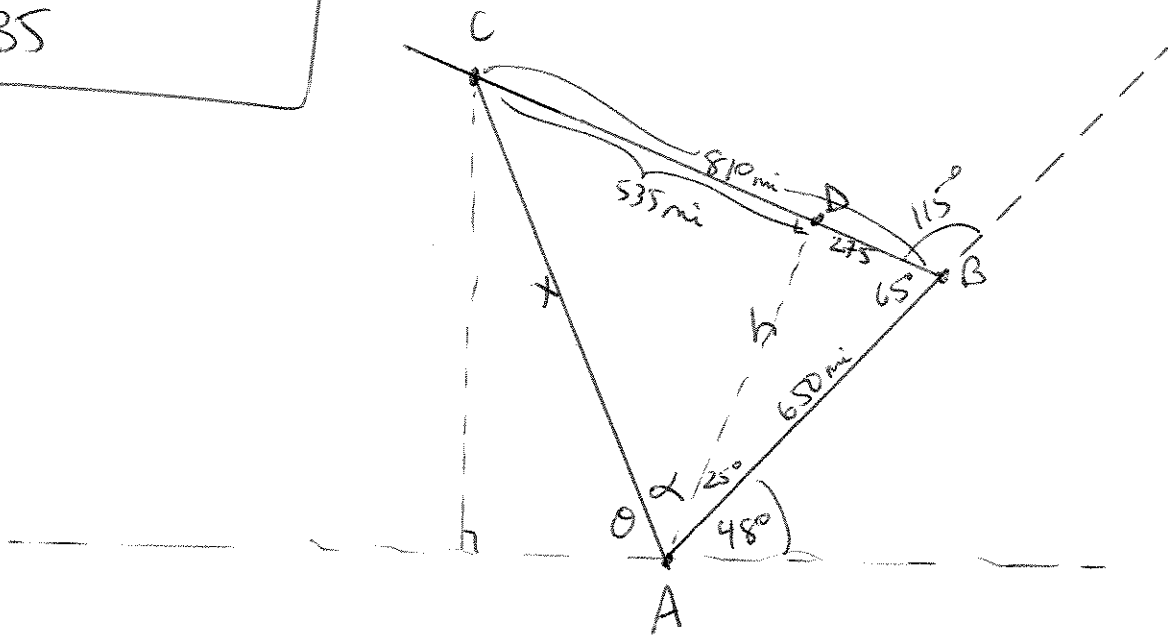


Chp 4 Review  
#135



From triangle ABD



$$\sin 65^\circ = \frac{h}{650}$$

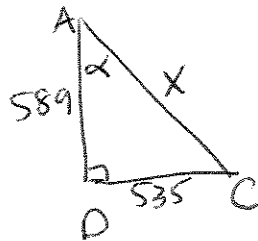
$$\Rightarrow h = 650 \sin 65^\circ \approx 589 \text{ mi}$$

Leg length for  $\overline{BD}$  can be found w/ cosine,

$$\cos 65^\circ = \frac{\overline{BD}}{650} \Rightarrow \overline{BD} = 650 \cos 65^\circ \approx 275 \text{ mi}$$

$$\Rightarrow CD = 810 - 275 = 535 \text{ mi}$$

So, now triangle ADC  
looks like  $\rightarrow$



and

$$589^2 + 535^2 = x^2$$

$$\Rightarrow x = \sqrt{589^2 + 535^2}$$

$$x \approx 796 \text{ mi}$$

Also,  $\tan \alpha = \frac{535}{589} \Rightarrow \alpha = \arctan\left(\frac{535}{589}\right) \approx 42^\circ$

$$\Rightarrow \theta + 42 + 25 + 48 = 180 \Rightarrow \theta = 65^\circ$$