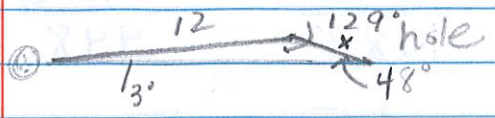
HW #25 p. 298 (4.7 continued...)

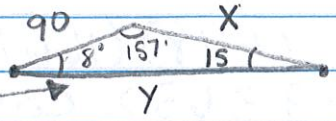
7.



$\frac{\sin 3^\circ}{x} = \frac{\sin 48^\circ}{12}$

$x \approx 0.85$ ft

9.



a. total distance $90 + x$

$90 + 48.4$

≈ 138.4 mi

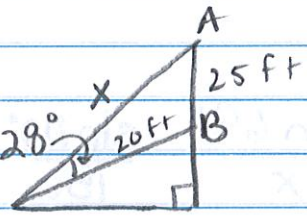
$\frac{\sin 8^\circ}{x} = \frac{\sin 15^\circ}{90}$

$x = 48.4$

b. direct flight $\frac{\sin 157}{y} = \frac{\sin 15}{90}$

$y = 135.9$ mi

18.



$\frac{\sin 28}{25} = \frac{\sin A}{20}$

$\sin A = .3756$

$A = 22.06$

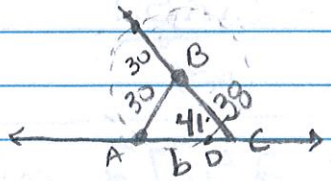
$B = 130$

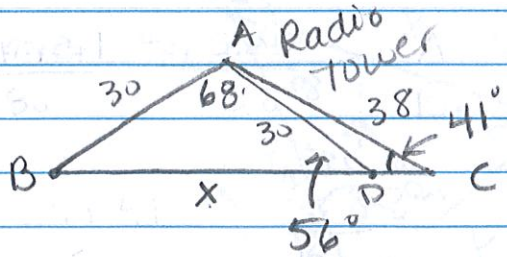
$\frac{\sin 130}{x} = \frac{\sin 28^\circ}{25}$

$x = 40.79$

≈ 41 ft

25.



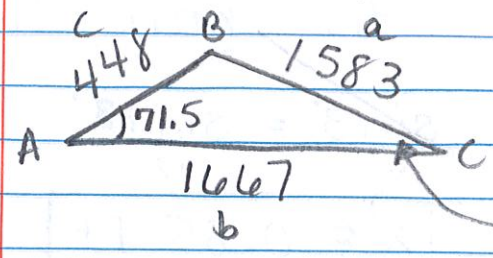


$\frac{\sin 41^\circ}{30} = \frac{\sin D}{38}$

$D = 56^\circ$

$\frac{\sin 68^\circ}{x} = \frac{\sin 56^\circ}{30}$

$x \approx 33.5$ mi

35. 

$\frac{\sin 71.5}{1583} = \frac{\sin C}{448}$

$C = 15.6$

$1583^2 = 448^2 + 1667^2 - 2(448)(1667)\cos A$

$2505889 = 2979593 - 1493632\cos A$

$-2979593 \quad -2979593$

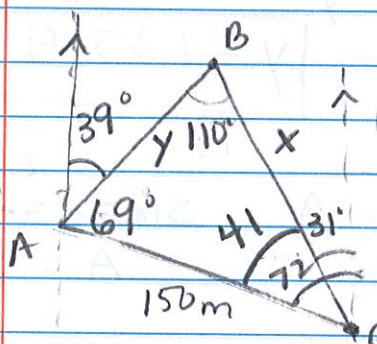
$-473704 = -1493632\cos A$

$\frac{-473704}{-1493632} = \frac{-1493632\cos A}{-1493632}$

$.317 = \cos A$

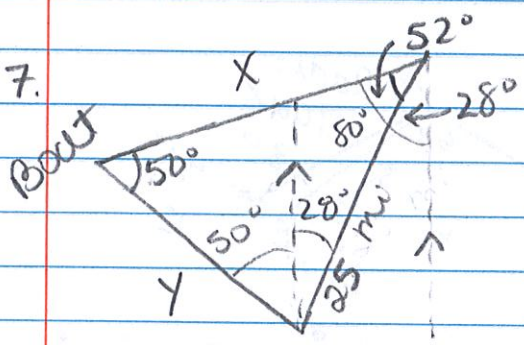
$\cos^{-1}.317 = A$

$A = 71.5°$ $B = 92.9°$

56. 

$\frac{\sin 110°}{150} = \frac{\sin 69°}{x}$ $\frac{\sin 110°}{150} = \frac{\sin 41°}{y}$

$x = 149.02$ mi $y = 104.72$ mi

57. 

$\frac{\sin 50}{25} = \frac{\sin 52}{y}$

$y = 25.72$ mi

$\frac{\sin 50}{25} = \frac{\sin 78}{x}$

$x = 31.92$ mi