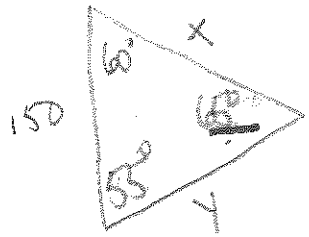
PW #2: Application Problems

① a) 

$\frac{\sin 65}{150} = \frac{\sin 55}{x}$

$x = 135.58 \text{ mi}$

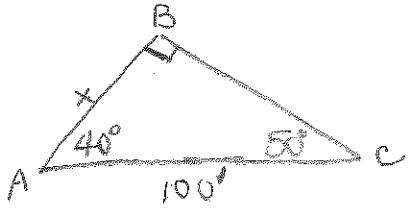
$\frac{\sin 65°}{150} = \frac{\sin 60°}{y}$

$y = 143.33 \text{ mi}$

b) $d = rt$ $\quad 135.6 = 200(t)$

$0.678 \text{ hr} = t$

$40.68 \text{ mi} = t$

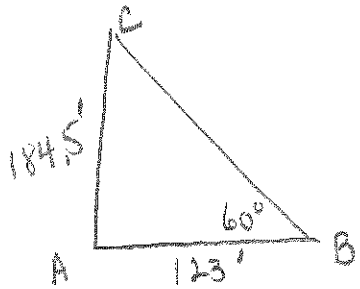
② 

$\sin 50° = \frac{x}{100}$

$x = 76.6 \text{ ft}$

or $\frac{\sin 90°}{100} = \frac{\sin 50°}{x}$

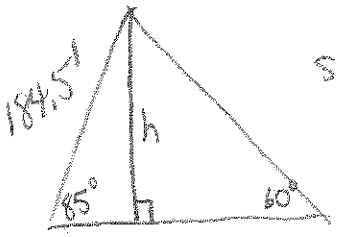
$x = 76.6 \text{ ft}$

③ 

$\frac{\sin 60°}{184.5} = \frac{\sin C}{123}$

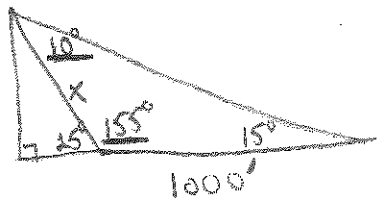
$\angle C = 35°$

$\angle A = 85°$



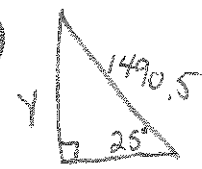
$\sin 85° = \frac{h}{184.5'}$

$h = 183.8'$

④ 

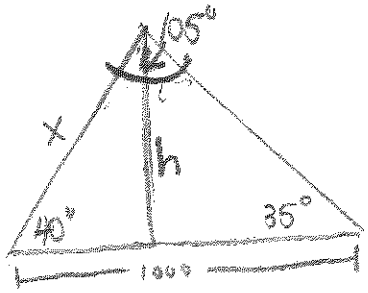
$\frac{\sin 10°}{1000} = \frac{\sin 15°}{x}$

$x = 1490.5'$

⑤ 

$\sin 25° = \frac{y}{1490.5'}$

$y = 629.9'$

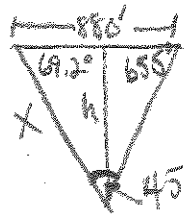
⑥ 

$\frac{\sin 105°}{1000} = \frac{\sin 35°}{x}$

$x = 593.81$

$\sin 40° = \frac{h}{593.81}$

$h = 381.7'$

⑦ 

$\frac{\sin 45.3°}{880} = \frac{\sin 65.5°}{x}$

$x = 1126.6'$

$\sin 69.2° = \frac{h}{1126.6}$

$h = 1053.1'$