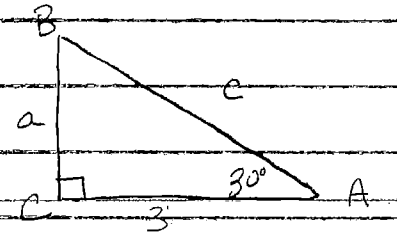
6.7 pg 517 5-11 odd, 17-29 odd, 33

5.



30-60-90

1 $\sqrt{3}$ 2

a 3 c

$m\angle B = 60°$

$a = \sqrt{3}$

$c = 2\sqrt{3}$

$\frac{1}{a} = \frac{\sqrt{3}}{3}$

$\frac{a\sqrt{3}}{\sqrt{3}} = \frac{3}{\sqrt{3}} \cdot \frac{\sqrt{3}}{\sqrt{3}}$

$a = \frac{3\sqrt{3}}{3}$

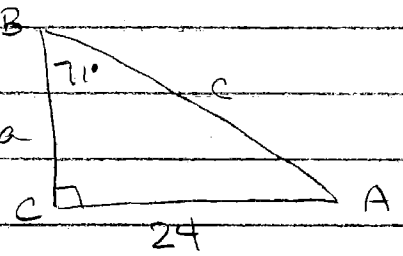
$a = \sqrt{3}$

$\frac{1}{a} = \frac{2}{c}$

$\frac{1}{\sqrt{3}} = \frac{2}{c}$

$c = 2\sqrt{3}$

7.



$A + 71 + 90 = 180$

$A + 161 = 180$

$A = 19°$

$m\angle A = 19°$

$a = 8.264$

$c = 25.383$

$\tan 19 = \frac{a}{24}$

$24 \tan 19 = a$

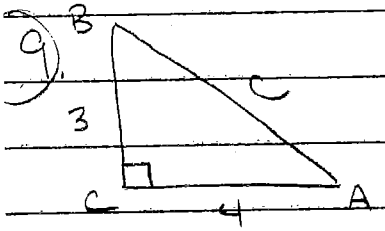
$8.264 = a$

$\sin 71 = \frac{24}{c}$

$\frac{c \sin 71}{\sin 71} = \frac{24}{\sin 71}$

$c = 25.383$

9.



$3^2+4^2=c^2$

$9+16=c^2$

$25=c^2$

$5=c$

$\tan A=\frac{3}{4}$

$A=\tan^{-1}\left(\frac{3}{4}\right)$

$A=36.870$

$c=5$

$m\angle A=36.870°$

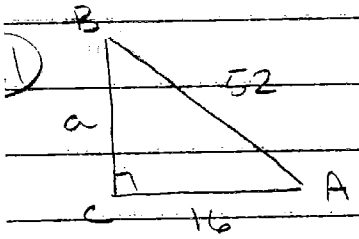
$m\angle B=53.13°$

$90+36.870+B=180$

$126.870+B=180$

$B=53.13$

D



$a^2+16^2=52^2$

$a^2+256=2704$

$a^2=2448$

$a=49.477$

$\cos A=\frac{16}{52}$

$A=\cos^{-1}\left(\frac{16}{52}\right)$

$A=72.080$

$a=49.477$

$m\angle A=72.080°$

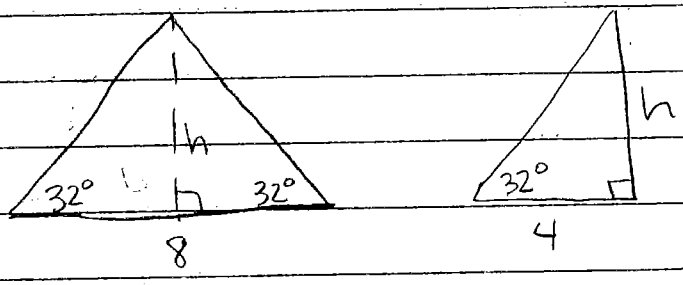
$m\angle B=17.92°$

$90+72.080+B=180$

$162.080+B=180$

$B=17.92$

17)



$\tan 32=\frac{h}{4}$

$4\tan 32=h$

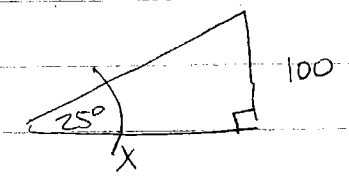
$2.499=h$

Altitude = 2.499

HW pg. 517 5-11 odd, 17-29 odd, 33

6.7 cont'd

19.



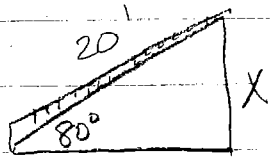
$\tan 25 = \frac{100}{x}$

$x \tan 25 = 100$

$\frac{x \tan 25}{\tan 25} = \frac{100}{\tan 25}$

$x = 214.451$ ft

21.

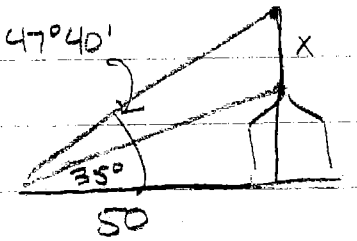


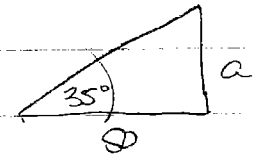
$\sin 80° = \frac{x}{20}$

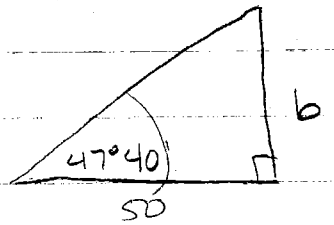
$20 \sin 80 = x$

$19.696 \text{ ft} = x$

23.







$\tan 35 = \frac{a}{50}$

$50 \tan 35 = a$

$35.010 = a$

$\tan 47°40' = \frac{b}{50}$

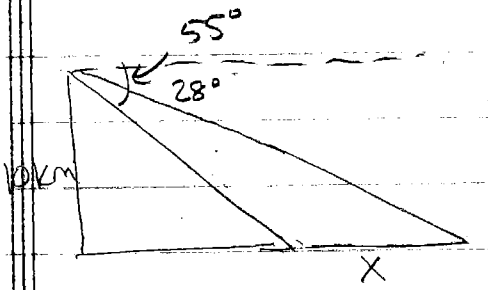
$50 \tan 47°40' = b$

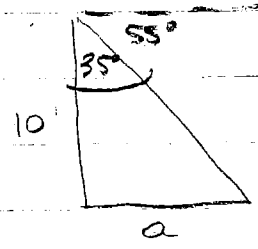
$54.885 = b$

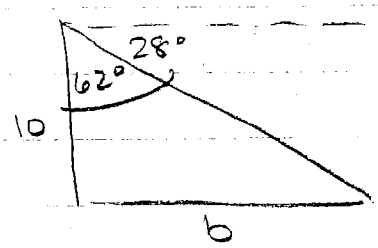
$x = b - a$

$= 19.875$ ft

25.







$\tan 35 = \frac{a}{10}$

$7.002 = a$

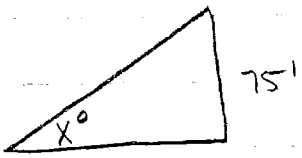
$\tan 62° = \frac{b}{10}$

$18.807 = b$

$x = b - a$

11.805 km

27.

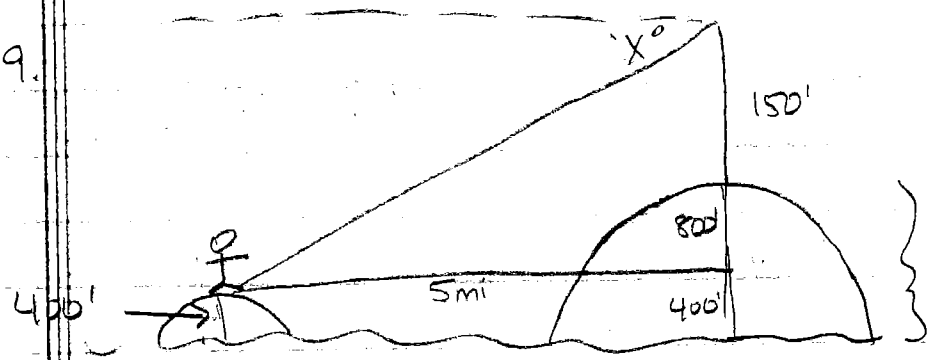


$\tan x = \frac{75}{50}$

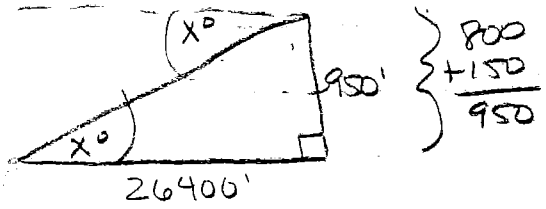
$x = \tan^{-1}\left(\frac{75}{50}\right)$

$\boxed{x = 56.310^\circ}$

29.



$5 \text{ mi} \cdot \frac{5280 \text{ ft}}{1 \text{ mi}} = 26400 \text{ ft}$

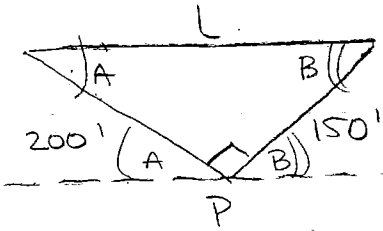


$\tan x = \frac{950}{26400}$

$x = \tan^{-1}\left(\frac{950}{26400}\right)$

$\boxed{x = 2.061^\circ}$

33.



(a) $200^2 + 150^2 = L^2$

$\boxed{250 \text{ ft} = L}$

$\tan A = \frac{150}{250}$

$A = \tan^{-1}\left(\frac{150}{250}\right)$

$\boxed{A = 30.964^\circ}$

$90 + 30.964 + B = 180$

$\boxed{B = 59.036^\circ}$

(b) $\frac{35 \text{ mi}}{\text{hr}} \cdot \frac{1 \text{ hr}}{60 \text{ min}} \cdot \frac{5280 \text{ ft}}{1 \text{ mi}} \cdot \frac{1 \text{ min}}{60 \text{ sec}}$

$= \frac{35 \cdot 5280}{60 \cdot 60} \frac{\text{ft}}{\text{sec}}$

$= \frac{154}{3} \frac{\text{ft}}{\text{sec}}$

$\frac{250}{(154/3)} = \boxed{4.87 \text{ seconds}}$