

Algebra II		Word Problems	
pg 594			
1) $\angle A = 100^\circ$ $b = 5.90$ $c = 14.9$	7) $\angle B = 30.7^\circ$ $\angle C = 19.3^\circ$ $c = 12.9$	1) 1350 km	7) 13.2 m
2) $\angle A = 11.3^\circ$ $\angle C = 18.7^\circ$ $b = 20.3$	8) $\angle C = 51.2^\circ$ $\angle A = 8.8^\circ$ $a = 3.53$	2) 4.13 h	8) 55.4°
3) $\angle A = 19.7^\circ$ $\angle B = 28.2^\circ$ $\angle C = 132.1$	9) $\angle A = 35.3^\circ$ $\angle C = 104.7^\circ$ $c = 15.1$	3) 55.7°, 353 m	9) 81.3°N or 81.3°S
4) $\angle A = 55^\circ$ $b = 12.5$ $c = 6.44$	10) $\angle B = 31.7^\circ$ $\angle C = 113.3^\circ$ $c = 19.2$	4) 388 ft	10) 298 m
5) $a = 20.0$ $\angle B = 25.7^\circ$ $\angle C = 34.3^\circ$	11) $\angle C = 80.0^\circ, 100.0^\circ$ $\angle A = 50.0^\circ, 30.0^\circ$ $a = 14.0, 9.14$	5) 232 km, 40.4°	11) 5.51
6) $\angle A = 18.2^\circ$ $\angle B = 51.3^\circ$ $\angle C = 110.5^\circ$	12) $\angle B = 74.6^\circ, 103.6^\circ$ $\angle A = 33.6^\circ, 6.4^\circ$ $a = 8.54, 1.72$	6) 10.5 m	12) 6.77 km
			13) 60.1 in

3) $a = 5$
 $b = 7$
 $c = 11$

$11^2 = 7^2 + 5^2 - 2(7)(5)\cos C$
 $C = 132.2^\circ$

$\frac{\sin A}{5} = \frac{\sin 132.2^\circ}{11}$
 $A = 19.7^\circ$

12) $b = 15$
 $c = 14.5$
 $\angle C = 70^\circ$

$\frac{\sin B}{15} = \frac{\sin 70^\circ}{14.5}$
 $\frac{a}{\sin 33.6^\circ} = \frac{14.5}{\sin 70^\circ}$
 $\angle B = 76.4^\circ$ or 103.6°
 $\frac{a}{\sin 6.4^\circ} = \frac{14.5}{\sin 70^\circ}$

2)

4)

$y \cos 34^\circ = \frac{750}{y}$
 $y \cos 34^\circ = 750$
 $y = \frac{750}{\cos 34^\circ}$
 $y = 905$
 $\frac{905}{\sin 40^\circ} = \frac{x}{\sin 16^\circ}$

Below is a better picture.

ASA (AAS)
 $\frac{x}{\sin 16^\circ} = \frac{904.66}{\sin 40^\circ}$
 $x = \frac{904.66 \sin 16^\circ}{\sin 40^\circ}$
 $x = 387.93$
 $\approx 388 \text{ ft}$

SOHCAHTOA
 $\cos 34^\circ = \frac{750}{y}$
 $y = \frac{750}{\cos 34^\circ} = 904.66$

4)

$\frac{x}{\sin 20^\circ} = \frac{15}{\sin 10^\circ}$

10)

To Solve this, there are 4 possible triangles to work with. Solve as many as are needed to find the length between the fires, x.

