Algebra II

pg 588

1)	$b=32.0$	7)	$\angle B=28.8^\circ$
2)	$a=8.60$	8)	$\angle A=25.5^\circ$
3)	$a=9.34$	9)	$\angle B=24.2^\circ$
4)	$c=7.49$	10)	$\angle C=31.2^\circ$
5)	$b=23.0$	11)	$\angle C=69.5^\circ$, 110.5°
6)	$a=100$	12)	$\angle B=61.2^\circ$, 118.8°

pg 589

1)	29.3 cm	7)	47.1 m
2)	20.1 in	8)	19500 ft
3)	49.7 cm	9)	8.1°
4)	26.6 m	10)	172 ft
5)	3280 m, 17,200 m	11)	14.3 km
6)	227 m	12)	64.6°

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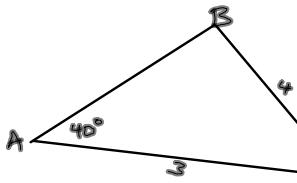
7) $a=4$ $b=3$ $\angle A=40^\circ$ $\angle B=$



$3\left(\frac{\sin 40^\circ}{4}=\frac{\sin B}{3}\right)$

$\frac{3\sin 40^\circ}{4}=\sin B$

$\sin^{-1}(.48209)=B$

$28.8^\circ=B$

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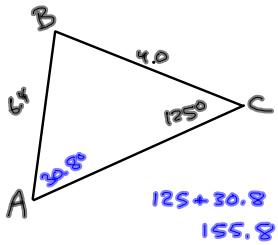
9) $a=4.0$

$c=6.4$

$\angle C=125^\circ$

$\angle B=\boxed{24.2^\circ}$



$125+30.8$

155.8

$180-155.8$

24.2°

$\left(\frac{\sin 125^\circ}{6.4}=\frac{\sin A}{4.0}\right)4$

$\frac{4\sin 125^\circ}{6.4}=\sin A$

$\sin^{-1}(0.5119)=A$

$30.8^\circ=A$

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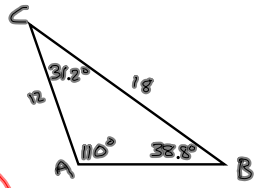
10) $a=18$

$b=12$

$\angle A=110^\circ$

$\boxed{\angle C=31.2^\circ}$



$\left(\frac{\sin 110^\circ}{18}=\frac{\sin B}{12}\right)12$

$\frac{12\sin 110}{18}=\sin B$

$\sin^{-1}(0.62646)=B$

$38.8^\circ=B$

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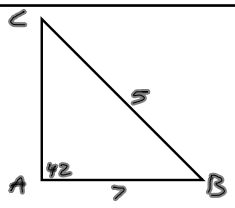
11) $a=5$

$c=7$

$\angle A=42^\circ$

$\angle C=\underline{69.5^\circ}$ or 110.5°



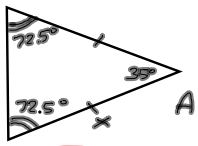
$7\left(\frac{\sin 42^\circ}{5}=\frac{\sin C}{7}\right)$

$\frac{7\sin 42^\circ}{5}=\sin C$

$\sin^{-1}(.93678)=C$

$69.5=C$

WP 4)



AAS

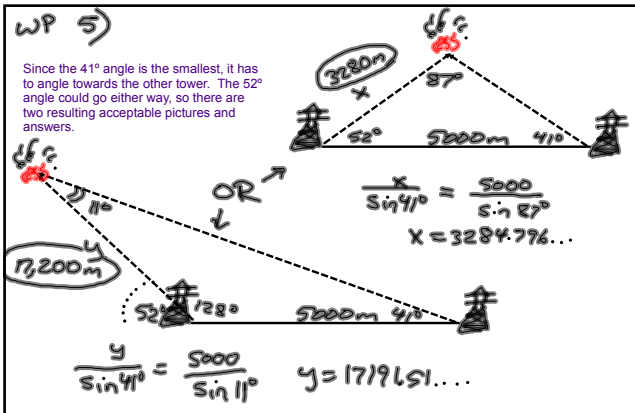
$180-35=145$

$\left(\frac{16}{\sin 35^\circ}=\frac{x}{\sin 72.5^\circ}\right)\sin 72.5^\circ$

$\boxed{26.6 \text{ in}=x}$

WP 5)

Since the 41° angle is the smallest, it has to angle towards the other tower. The 52° angle could go either way, so there are two resulting acceptable pictures and answers.



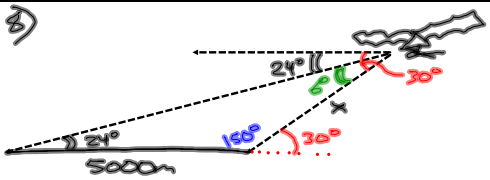
$\frac{x}{\sin 41°} = \frac{5000}{\sin 87°}$

$x = 3284.776\ldots$

OR

$\frac{y}{\sin 41°} = \frac{5000}{\sin 11°}$ $y = 17196.51\ldots$

8)

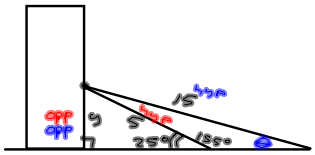


$\frac{x}{\sin 24°} = \frac{5000}{\sin 6°}$ $\cdot \sin 24°$

$x = 19455.78$

19,500′

9)



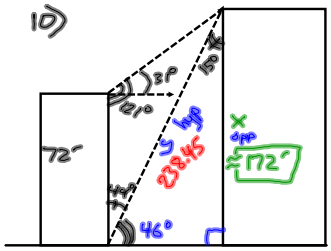
There are two ways to do this problem, one using Law of Sines, the other using two right triangles.

$\sin 25 = \frac{y}{5}$ $\frac{\text{opp}}{\text{hyp}}$

$\sin\theta = \frac{y}{15}$ $\frac{\text{opp}}{\text{hyp}}$

OR $\frac{\sin\theta}{5} = \frac{\sin 155°}{15_m}$

10)



$\frac{y}{\sin 121°} = \frac{72}{\sin 15°}$

$y = 238.45$

$\sin 46° = \frac{\text{opp}}{\text{hyp}}$

$\sin 46° = \frac{x}{238.45}$

$171.52 = x$