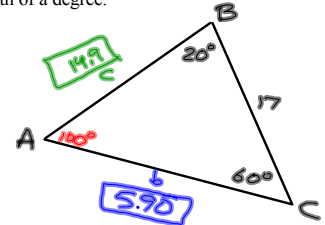## Slide 1

Algebra II
12-8
Solving General Triangles

Slide 2

Solve each triangle. Give lengths to three significant digits and angle measures to the nearest tenth of a degree.   (pg 594)

1) (6 on orals)

ASA
AAS
Law of Sines

$a = 17$
$\angle B = 20°$
$\angle C = 60°$

$\angle A = 180 - 20 - 60$
$= 100°$

$\left(\dfrac{b}{\sin 20°} = \dfrac{17}{\sin 100°}\right)\sin 20°$

$b = 5.90$

$\dfrac{c}{\sin 60°} = \dfrac{17}{\sin 100°}$

$c = 14.949$

14.9 c
B 20°
17
A 100°
60° C
5.90

Slide 3

Solve each triangle. Give lengths to three significant digits and angle measures to the nearest tenth of a degree.

11) (16 on orals) ASS (not nice)

$b = 14$
$c = 18$
$\angle B = 50°$

Law of Sines

B
50°
18
$a_1 = 14$
$a_2 = 9.14$
A
$A_1 = 50°$
$A_2 = 30°$
$C = 80°$
$C_2 = 100°$
14
C
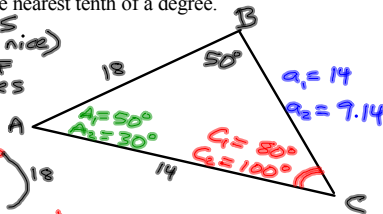
$\left(\dfrac{\sin C}{18} = \dfrac{\sin 50°}{14}\right)18$

$\sin C = (.984914284)$

$C = \sin^{-1}(.984914284)$

$C_1 = 80.03 = 80.0$

or

$C_2 = 100°$ $\begin{array}{r} 180 \\ -\ 80 \\ \hline 100 \end{array}$

$\dfrac{a_1}{\sin 50} = \dfrac{14}{\sin 50°}$

$a_1 = 14$

$\dfrac{a_2}{\sin 30°} = \dfrac{14}{\sin 50°}$ $a_2 = 9.14$

Slide 4

Give lengths to three significant digits and angle measures to the nearest tenth of a degree.

1) Two planes leave an airport at the same time, one flying at 300 km/h and the other at 420 km/h. The angle between their flight paths is 75°. After 3 hours, how far apart are they?

SAS
Law of Cosines

900 km
75°
1260 km
x
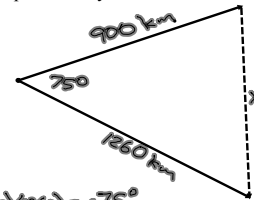
$x^2 = 900^2 + 1260^2 - 2(900)(1260)\cos 75°$

$x = 1345.58 \approx 1350 \text{ km}$

Slide 5

Pg 594

1-12 all   (6-17 orals)

Pg 595

1-13 all