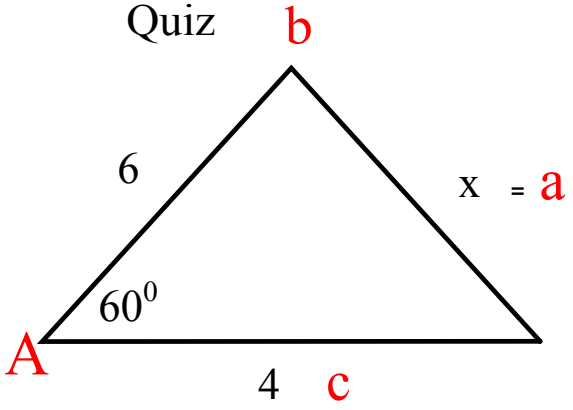
Law MR12 Lesson 83 4/28/11

Aim: How do we use the Law of Cosines to find missing sides or angles?

HW: Work Sheet Green Book Pg

Quiz



Find x

Law of Cosines $a^2 = b^2 + c^2 - 2bc \cos A$

1. In a triangle, if the lengths of any two sides and the included angle measurement are known, we can apply the law of cosines to find the length of the third side.

2. In a triangle, if the lengths of all three sides are known, we then can apply the law of cosines to find the measure degree of any angle.

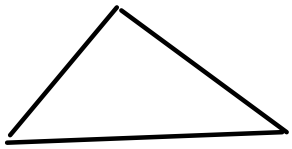
SAS

We can use the ***SAS*** and ***SSS*** to memorize, where letters stand for the known values.

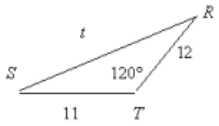
SSS

Practice:

1. In ΔABC, if $a = 4$, $c = 6$ and $\cos B = 1/16$. Find b.



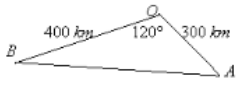
2. In ΔABC, $a = 5$, $b = 7$, $c = 10$. Find $\cos B$



3. In ΔRST, $r = 11$, $s = 12$, and $m\angle T = 120°$. Find t to the nearest integer.

4. Two airplanes leave an airport at the same time. The first flies 150 km/h in a direction of 320°.

The second flies 200 km/h in a direction of 200°. After 2 hours, how far apart are the planes?



(608 km)

5.

The beam of a searchlight situated at an offshore point W sweeps back and forth between shore points A and B. Points W is located 12 km from A and 25 km from B. The distance between A and B is 29 km. Find the measure of $\angle AWB$ to the *nearest tenth degree*.