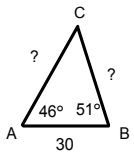
Lesson 86 AIM: How do we solve triangle problems?

HW: Page 579-580 #3,4,6,7,9,13,23
28 is extra credit

Do Now: 1) In ΔABC m∠ A = 46º, m∠B = 51ºand c = 30 cm.
Find to the nearest tenth a) AC and b) BC

ASA

Law Of Sines or Law of Cosine????



Now that we know m∠C we can use the Law of Sines to help us find b (AC): $\frac{30}{\sin 83^\circ} = \frac{b}{\sin 51^\circ}$

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b = 23.6 = AC

Now we can find BC the same way. Let BC = a

$\frac{30}{\sin 83^\circ} = \frac{a}{\sin 46^\circ}$

a = 22.0 = BC

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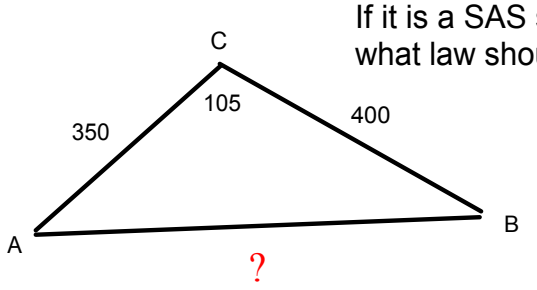
To determine the method we should use for a particular problem:

Law of Cosine: SAS SSS
Law of Sine: ASA AAS SSA
Notice that AAA is not good for either law.

Remember that SSA will possibly have 1 Triangles, 2 triangles or no triangles.

May 1-8:16 AM

2) To determine the distance between two points, A and B, on opposite sides of a swampy region, a surveyor chose a point, C, that was 350 m from point A and 400 m from point B. If the measure of ∠ACB was found to be 105° find the distance across the swampy region, AB, to the nearest meter.



If it is a SAS situation what law should we use?

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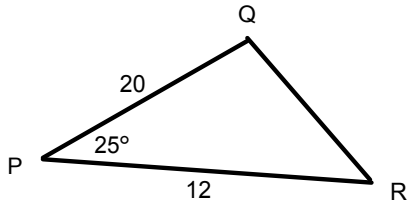
3) In ΔPQR p = 25, q = 12, r = 20. Find each angle to the nearest degree.



Which Law should we use?

Start with a SAS Situation

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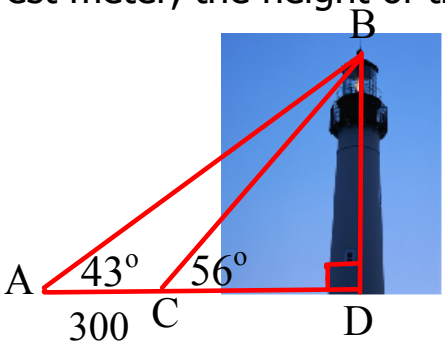
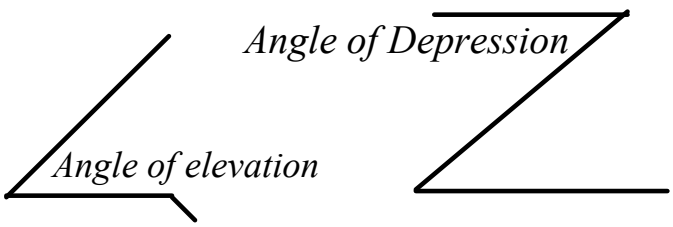
4) In order to know how much seed to buy for a triangular plot of land, Kevin needs to know the area of the plot. The lengths of the sides are 15 feet, 25 feet, and 30 feet. Find the area of the plot.

May 1-8:34 AM

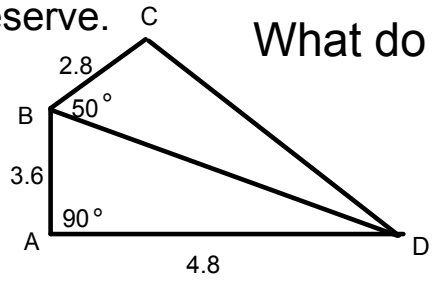
5) The angle of elevation from a ship at point A to the top of a lighthouse, point B, is 43°. When the ship reaches point C, 300 meters closer to the lighthouse, the angle of elevation is 56°. Find, to the nearest meter, the height of the lighthouse, BD.





May 1-8:38 AM

Challenge: A forest preserve has the shape of a quadrilateral ABCD where AB = 3.6 kilometers, AD = 4.8 kilometers, m ∠ DAB = 90, m ∠ DBC = 50 and BC = 2.8 kilometers. Find to the nearest tenth the number of square kilometers in the area of the forest preserve.



What do we do first??

Mar 30-6:18 PM

May 1-8:16 AM