

## Sections 6.1 & 6.2 - I.C.E.

**What I will give you:**

*Area of triangle:*

$$\text{Area} = \frac{1}{2}bc\sin A$$

*and*

*Heron's formula for the area of a triangle:*

$$\text{Area} = \sqrt{s(s-a)(s-b)(s-c)}$$

$$\text{where } s = \frac{a+b+c}{2}$$

**What you need to memorize:**

*Law of Sines – used with AAS, ASA, and SSA:*

$$\frac{a}{\sin A} = \frac{b}{\sin B} = \frac{c}{\sin C}$$

*and*

*Law of Cosines – used with SAS & SSS*

$$c^2 = a^2 + b^2 - 2ab\cos C$$

Solve the following triangles using the Law of Sines or the Law of Cosines:

1.  $\angle B = 72^\circ$ ,  $\angle C = 82^\circ$ ,  $b = 54$

2.  $\angle C = 43^\circ$ ,  $a = 22.5$ ,  $b = 31.4$

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3.  $a=2.5$ ,  $b=5$ ,  $c=4.5$

4.  $\angle A=76^\circ$ ,  $a=34$ ,  $b=21$

Use the information given to find the AREA of the triangle:

5.  $\angle A=27^\circ$ ,  $b=5$ ,  $c=7$

6.  $a=12.3$ ,  $b=15.8$ ,  $c=3.7$

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7. A tree stands on a hillside of slope  $28^\circ$ (from the horizontal). The bottom of the hill is 75 feet away from the top of the tree and the angle of elevation to the top of the tree from this point is  $45^\circ$ . What is the height of the tree (not including the hill)?