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:

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

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

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. $\angle B = 72°$, $\angle C = 82°$, $b = 54$ What type of Triangle? _____   Law to use? _____

2. $\angle C = 43°$, $a = 22.5$, $b = 31.4$ What type of Triangle? _____   Law to use? _____

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3. $a=2.5$, $b=5$, $c=4.5$ What type of Triangle? _____   Law to use? _____

4. $\angle A=76°$, $a=34$, $b=21$ What type of Triangle? _____   Law to use? _____

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

5. $\angle A=27°$, $b=5$, $c=7$ What type of Triangle? _____   Formula to use? _____

6. $a=12.3$, $b=15.8$, $c=3.7$ What type of Triangle? _____   Formula to use? _____

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7. A tree stands on a hillside of slope 28°(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°. What is the height of the tree (not including the hill)?