Section 9.4

Area of a Triangle

AREA OF A TRIANGLE

The area K of triangle ABC equals one-half the product of the lengths of two of its sides and the sine of their included angle; that is,

$$K = \frac{1}{2}ab \sin C$$

$$K = \frac{1}{2}ac \sin B$$

$$K = \frac{1}{2}bc \sin A$$

HERON'S FORMULA

The area K of a triangle with sides a, b, and c is

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

where $s = \frac{1}{2}(a+b+c)$.

Heron's formula is normally used when we have an SSS triangle. For any other type of triangle, we use the formula on the previous slide although we may have to use the Law of Sines to find the necessary information.