Section 9.4
Area of a Triangle
The area $K$ of a triangle is

\[ K = \frac{1}{2}bh \]

where $b$ is the base and $h$ is an altitude drawn to that base.
OBJECTIVE 1

1  Find the Area of SAS Triangles
The area $A$ of a triangle equals one-half the product of two of its sides times the sine of their included angle.

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

$$K = \frac{1}{2} bc \sin C$$
EXAMPLE

Finding the Area of a SAS Triangle

Find the area $K$ of the triangle for which: $b = 8, c = 5, A = 40$
OBJECTIVE 2

2  Find the Area of SSS Triangles
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 $s = \frac{1}{2}(a + b + c)$. 

EXAMPLE

Finding the Area of a SSS Triangle

Find the area of a triangle whose sides are 2, 4, and 7.