

7.4 Area of a Triangle

$$A = \frac{1}{2} bh \quad b = \text{base} \quad h = \text{height (altitude)}$$

Theorem: The area A of a triangle equals one-half the product of two of its sides and the sine of their included angle.

Ex. 1 Find area of the triangle for which:

$$a = 8, b = 6, \gamma = 30$$

* If the 3 sides of a triangle are known, another formula, called Heron's Formula, can be used to find the area of a triangle.

$$\text{Heron's Formula: } A = \sqrt{s(s-a)(s-b)(s-c)} \quad \text{where } s = \frac{1}{2}(a+b+c)$$

Proof on Pg. 559

Ex. 2 Find area of triangle whose side are 4,5,7