

9-2 The Area of a Triangle

Prove the area of a triangle , K, is $K = \frac{1}{2}ab\sin C = \frac{1}{2}bc\sin A = \frac{1}{2}ac\sin B$.

Problems:

1. Draw $\triangle ABC$, $m\angle C = 30^\circ$, $b = 4$, $a = 10$, find the area of the triangle.
2. Two adjacent sides of a triangle have lengths 5 cm and 8 cm.
 - a. If the sides form a 30° angle, what is the area of the triangle?
 - b. If the sides form a 150° angle, what is the area of the triangle?

3. A triangle with the area 5cm^2 has two sides of lengths 4 cm and 5 cm.

a. Find the sine of the angle included between the two sides.

b. Find the two possible measures of the included angle.