# 3/10/20 - Warm Up Problem

A Barbie doll is 1/6 the height of a real person.

Average size for a living room in a new house is 303 ft$^2$.

How many square feet should be in Barbie's living room?

$$\left(\frac{1}{6}\right)^2 = \frac{1}{36}$$

$$303 \cdot \frac{1}{36} =$$

$$8.41 \; ft^2$$

**Concept 24 - Area of a Triangle given SAS**

**Goal:** use prior knowledge to develop a formula for area of SAS triangles
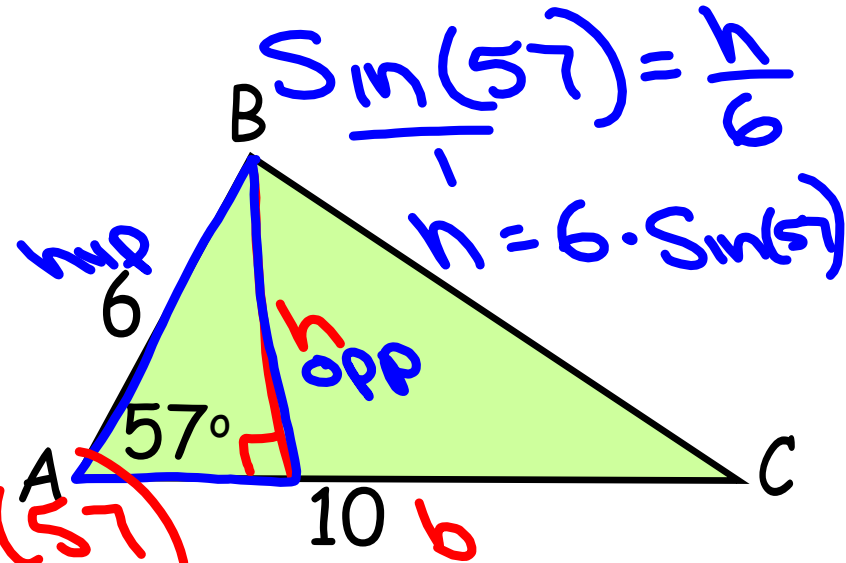
Find the area of ΔABC.

What measure are you missing?
How could you find it?

$$A = \tfrac{1}{2}bh$$
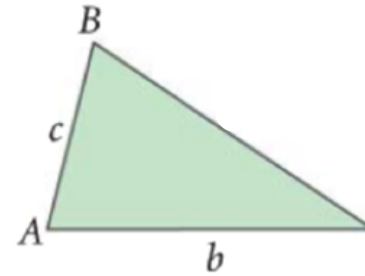
$$A = \tfrac{1}{2} \cdot 10 \cdot 6 \cdot \sin(57)$$
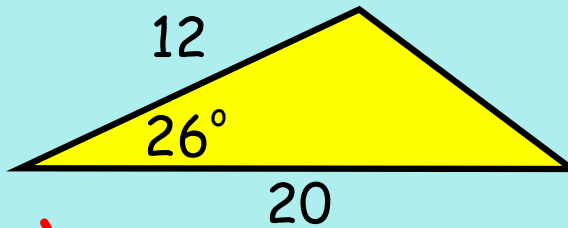
$$A = 25.2 \text{ units}^2$$

$$\sin(57) = \frac{h}{6}$$

$$h = 6 \cdot \sin(57)$$

hyp 6

h  opp

57°

10  b

## Area of a Triangle Given SAS

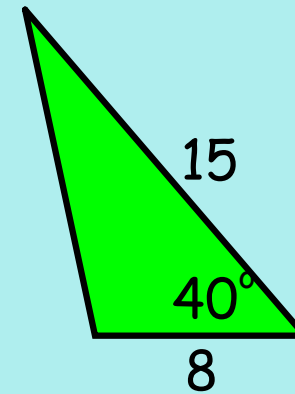$$A = \frac{1}{2} \cdot b \cdot c \cdot Sin(A)$$

sides    Angle

Find the area of each triangle.

12

26°

20

$A = \frac{1}{2}(12)(20)Sin(26)$

$A = 52.6 \text{ units}^2$

15

40°

8

$A = 1/2(15)(8)Sin\ 40$

$A = 38.6 \text{ units}^2$

**Assignment:**

Kahoot Challenge

go to Kahoot.it

Code: 0124607