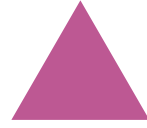


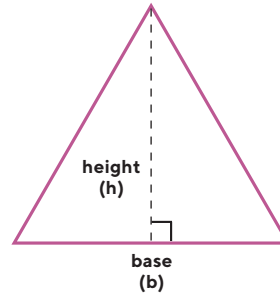


# Geometry Detective #2

## Area of a Triangle



The **area of a triangle** is one-half the length of the base times the height. The **base** of a triangle can be any one of its sides. The **height** is the distance from a base to its opposite point, or vertex. A base must be perpendicular to the height.

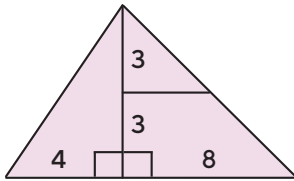


**Area of a triangle:**

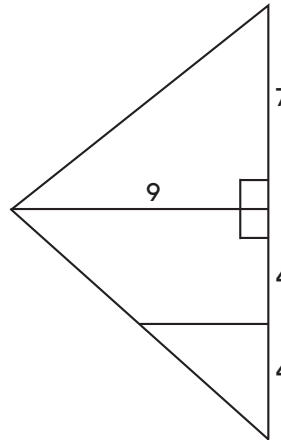
$$\frac{1}{2} \times \text{base} \times \text{height}$$

**DIRECTIONS:** Use the formula for the area of a triangle as shown above to calculate the area for the following triangles in square units. Show your work in the right column.

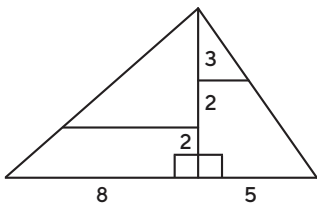
**EXAMPLE:**



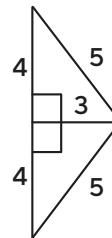
$$\begin{aligned} \text{base} &= 4 + 8 = 12 \\ \text{height} &= 3 + 3 = 6 \\ \text{area} &= \frac{1}{2} \times 12 \times 6 \\ &= 36 \text{ units}^2 \end{aligned}$$



$$\begin{aligned} \text{base} &= 7 + 4 + 4 = 15 \\ \text{height} &= 9 \\ \text{area} &= \frac{1}{2} \times 15 \times 9 \\ &= 67.5 \text{ or } 67\frac{1}{2} \text{ units}^2 \end{aligned}$$



$$\begin{aligned} \text{base} &= 8 + 5 = 13 \\ \text{height} &= 3 + 2 + 2 = 7 \\ \text{area} &= \frac{1}{2} \times 13 \times 7 \\ &= 45.5 \text{ or } 45\frac{1}{2} \text{ units}^2 \end{aligned}$$



$$\begin{aligned} \text{base} &= 4 + 4 = 8 \\ \text{height} &= 3 \\ \text{area} &= \frac{1}{2} \times 8 \times 3 \\ &= 12 \text{ units}^2 \end{aligned}$$