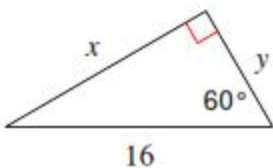


Using the 30-60-90 triangle example

Example 1: Find x and y in the special right triangle below.



Step 1: Determine type of triangle and side known.

This is a [30-60-90 triangle](#). I know the hypotenuse of the triangle since [the hypotenuse is the longest side](#).

Step 2: Identify the side or sides you need to find.

x is the long leg

y is the short leg

Step 3: Follow directions in [Special Right Triangle Cheat Sheet](#) to find missing sides

To get the short leg, **Divide by 2**

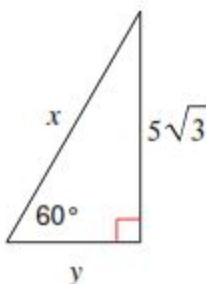
Short leg = $16/2$

Short leg = 8

Long leg = $16 \cdot \frac{\sqrt{3}}{2}$

Long leg = $8\sqrt{3}$

Example 2: Find x and y in the special right triangle below.



Step 1: Determine type of triangle and side known.

This is a [30-60-90 triangle](#). I know the long leg of the triangle since [the long leg is the second longest side](#).

Step 2: Identify the side or sides you need to find.

x is the hypotenuse

y is the short leg

Step 3: Follow directions in [Special Right Triangle Cheat Sheet](#) to find missing sides

To get the short leg, Divide by 3 and multiply by $\sqrt{3}$

$$\text{short leg} = 5 \sqrt{3} \cdot \sqrt{3} / 3$$

short leg = $5 \cdot 3 / 3$ (Remember that multiplying a square root by itself cancels the root sign)

$$\text{short leg} = 5$$

To get the hypotenuse, Multiply by $\frac{2}{3}$ and multiply by $\sqrt{3}$

$$\text{hypotenuse} = 5 \sqrt{3} \cdot \sqrt{3} \cdot \frac{2}{3}$$

$$\text{hypotenuse} = 5 \cdot 3 \cdot \frac{2}{3}$$

$$\text{hypotenuse} = 30 / 3$$

$$\text{hypotenuse} = 10$$