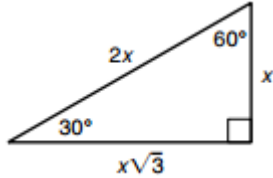
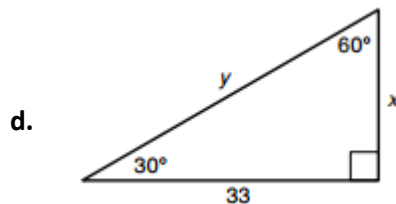
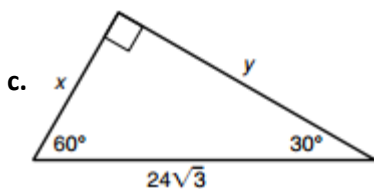
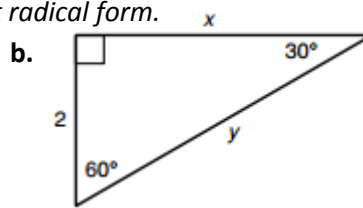
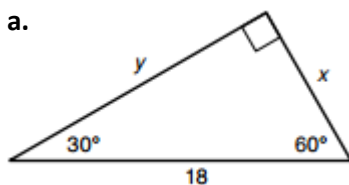


Theorem	Diagram
<p align="center"><b>30° – 60°– 90° Triangle Theorem</b></p> <p>In a 30° – 60°– 90°, the length of the hypotenuse is twice the length of shorter leg, and the longer leg is <math>\sqrt{3}</math> times the length of the shorter leg.</p>	

**\*\*Note** – The short leg is always opposite the 30° angle!  
- It is best to find the length of the short leg first if you can! (if it is not already given)

**Example 1: Find lengths in a 30° – 60°– 90° triangle**

Find the values of  $x$  and  $y$ . Leave answer in simplest radical form.



**Example 2: Apply 30° – 60°– 90° Triangle Theorem**

- a. You make a guitar pick that resembles an equilateral triangle with side lengths of 32 mm. What is the approximate height of the pick?

- b. An equilateral triangle has a height of  $10\sqrt{3}$ . What is the length of a side of the triangle?

