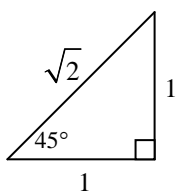


## Lesson 6: Special Triangles—Worksheet

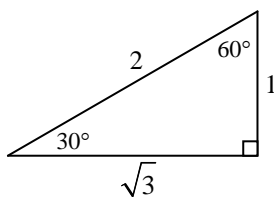
The 45-45-90 and the 30-60-90 triangles are referred to as **special triangles** because they are the only right triangles for which it is easy to figure out the ratios of the sides by hand. Compute the following by drawing the appropriate special triangle and labeling the sides. (Draw a new triangle for each problem. For our future work, it is important to be able to do all of these quickly and easily.)

1.  $\cos(45^\circ)$



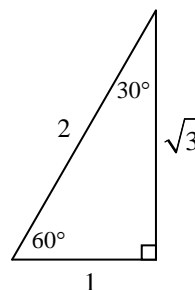
$$\begin{aligned}\cos(45^\circ) &= \frac{1}{\sqrt{2}} \cdot \frac{\sqrt{2}}{\sqrt{2}} \\ &= \frac{\sqrt{2}}{2}\end{aligned}$$

2.  $\cot(30^\circ)$



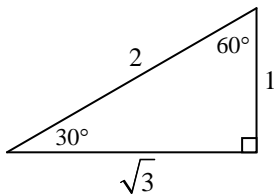
$$\cot(30^\circ) = \frac{\sqrt{3}}{1} = \sqrt{3}$$

3.  $\csc(60^\circ)$



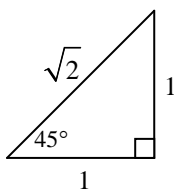
$$\csc(60^\circ) = \frac{2}{\sqrt{3}} \cdot \frac{\sqrt{3}}{\sqrt{3}} = \frac{2\sqrt{3}}{3}$$

4.  $\sin(30^\circ)$



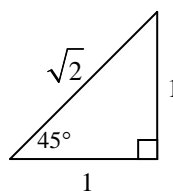
$$\sin(30^\circ) = \frac{1}{2}$$

5.  $\tan(45^\circ)$



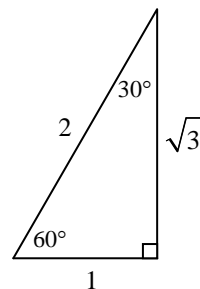
$$\tan(45^\circ) = \frac{1}{1} = 1$$

6.  $\sec(45^\circ)$



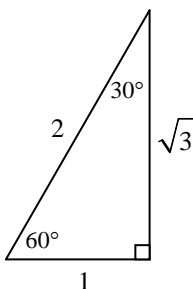
$$\sec(45^\circ) = \frac{\sqrt{2}}{1} = \sqrt{2}$$

7.  $\sec(60^\circ)$



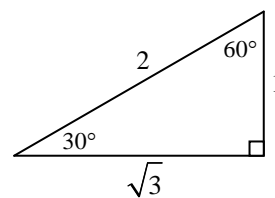
$$\sec(60^\circ) = \frac{2}{1} = 2$$

8.  $\sin(60^\circ)$



$$\sin(60^\circ) = \frac{\sqrt{3}}{2}$$

9.  $\csc(30^\circ)$



$$\csc(30^\circ) = \frac{2}{1} = 2$$