

## J. Simplifying Radicals

List of perfect squares:

Multiply	Perfect Square
2x2	4
3x3	9
4x4	16
5x5	25
6x6	36
7x7	49
Keep going	

Ex. Simplify the radical

$$\begin{array}{ccc} \sqrt{192} & & \\ \swarrow & \searrow & \\ \sqrt{64} & & \sqrt{3} \\ & 8 & \\ \text{So } \sqrt{192} & = 8 \cdot \sqrt{3} & \end{array}$$

$$\begin{array}{ccc} \text{OR} & & \\ \sqrt{192} & & \\ \swarrow & \searrow & \\ \sqrt{16} & \sqrt{12} & \\ 4 & & \\ \swarrow & \searrow & \\ \sqrt{4} & \sqrt{3} & \\ & 2 & \\ \text{So } \sqrt{192} & = 4 \cdot 2\sqrt{3} = 8 \cdot \sqrt{3} & \end{array}$$

\*\*\*Practice Simplifying Radicals: Simplify each radical.

1.  $\sqrt{75}$

$5\sqrt{3}$

2.  $\sqrt{36}$

$6$

3.  $\sqrt{80}$

$4\sqrt{5}$

4.  $\sqrt{8}$

$2\sqrt{2}$

5.  $\sqrt{32}$

$4\sqrt{2}$

6.  $\sqrt{125}$

$5\sqrt{5}$

7.  $\sqrt{175}$

$5\sqrt{7}$

8.  $\sqrt{45}$

$3\sqrt{5}$

9.  $\sqrt{20}$

$2\sqrt{5}$

10.  $\sqrt{144}$

$12$