math Antics
Exercises

Name:

Date:

Simplifying Square Roots

1 Simplify.

$\sqrt{50}$

$\sqrt{25 \times 2}$

$\sqrt{25} \times \sqrt{2}$

$5\sqrt{2}$

2 Simplify.

$\sqrt{99}$

$\sqrt{9 \times 11}$

$\sqrt{9} \times \sqrt{11}$

$3\sqrt{11}$

3 Simplify.

$\sqrt{48}$

$48 = 8 \cdot 6 = 2 \cdot 2 \cdot 2 \cdot 2 \cdot 3$

$\sqrt{2 \cdot 2 \cdot 2 \cdot 2 \cdot 3}$

$2 \cdot 2 \cdot \sqrt{3}$

$4\sqrt{3}$

4 Simplify.

$\sqrt{75}$

$75 = 3 \cdot 25 = 3 \cdot 5 \cdot 5$

$\sqrt{3 \cdot 5 \cdot 5}$

$5\sqrt{3}$

5 Simplify.

$\sqrt[3]{40}$

$40 = 8 \cdot 5 = 2 \cdot 2 \cdot 2 \cdot 5$

$\sqrt[3]{2 \cdot 2 \cdot 2 \cdot 5}$

$2\sqrt[3]{5}$

6 Simplify.

$\sqrt[4]{32}$

$32 = 4 \cdot 8 = 2 \cdot 2 \cdot 2 \cdot 2 \cdot 2$

$\sqrt[4]{2 \cdot 2 \cdot 2 \cdot 2 \cdot 2}$

$2\sqrt[4]{2}$

7 Rationalize the denominator.

$$\frac{1}{\sqrt{3}} \cdot \frac{\sqrt{3}}{\sqrt{3}}$$

$$\frac{\sqrt{3}}{3}$$

8 Rationalize the denominator.

$$\frac{3}{5\sqrt{2}} \cdot \frac{\sqrt{2}}{\sqrt{2}}$$

$$\frac{3\sqrt{2}}{5 \cdot 2} = \frac{3\sqrt{2}}{10}$$

See Video for step-by-step solutions to each problem.