Math Antics Worksheets

Simplifying Square Roots - Set 1

Instructions: Simplify these square roots.

1 $\sqrt{75}$

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

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

$5\sqrt{3}$

2 $\sqrt{25}$

$25 = 5 \cdot 5$

$\sqrt{5 \cdot 5}$

5

3 $\sqrt{50}$

$50 = 2 \cdot 25 = 2 \cdot 5 \cdot 5$

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

$5\sqrt{2}$

4 $\sqrt{100}$

$100 = 10 \cdot 10$

10

5 $\sqrt{300}$

$300 = 3 \cdot 10 \cdot 10$

$\sqrt{3 \cdot 10 \cdot 10}$

$10\sqrt{3}$

6 $\sqrt{400}$

$400 = 2 \cdot 2 \cdot 10 \cdot 10$

$\sqrt{2 \cdot 2 \cdot 10 \cdot 10}$

$2 \cdot 10$

20

7 $\sqrt{9}$

$9 = 3 \cdot 3$

3

8 $\sqrt{27}$

$27 = 3 \cdot 3 \cdot 3$

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

$3\sqrt{3}$

9 $\sqrt{54}$

$54 = 6 \cdot 9 = 2 \cdot 3 \cdot 3 \cdot 3$

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

$3\sqrt{6}$

10 $\sqrt{12}$

$12 = 2 \cdot 2 \cdot 3$

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

$2\sqrt{3}$

11 $\sqrt{24}$

$24 = 4 \cdot 6 = 2 \cdot 2 \cdot 2 \cdot 3$

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

$2\sqrt{6}$

12 $\sqrt{48}$

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

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

$4\sqrt{3}$

Name: _____

Date: _____

Simplifying Square Roots - Set 2

Instructions: Simplify these square roots.

1 $\sqrt{40}$

$40 = 4 \cdot 10 = 2 \cdot 2 \cdot 2 \cdot 5$

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

$2\sqrt{10}$

2 $\sqrt{80}$

$80 = 8 \cdot 10 = 2 \cdot 2 \cdot 2 \cdot 2 \cdot 5$

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

$4\sqrt{5}$

3 $\sqrt{90}$

$90 = 9 \cdot 10 = 3 \cdot 3 \cdot 2 \cdot 5$

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

$3\sqrt{10}$

4 $\sqrt{44}$

$44 = 4 \cdot 11 = 2 \cdot 2 \cdot 11$

$\sqrt{2 \cdot 2 \cdot 11}$

$2\sqrt{11}$

5 $\sqrt{125}$

$125 = 5 \cdot 5 \cdot 5$

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

$5\sqrt{5}$

6 $\sqrt{63}$

$63 = 9 \cdot 7 = 3 \cdot 3 \cdot 7$

$\sqrt{3 \cdot 3 \cdot 7}$

$3\sqrt{7}$

7 $\sqrt{28}$

$28 = 2 \cdot 14 = 2 \cdot 2 \cdot 7$

$\sqrt{2 \cdot 2 \cdot 7}$

$2\sqrt{7}$

8 $\sqrt{60}$

$60 = 6 \cdot 10 = 2 \cdot 2 \cdot 3 \cdot 5$

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

$2\sqrt{15}$

9 $\sqrt{88}$

$88 = 8 \cdot 11 = 2 \cdot 2 \cdot 2 \cdot 11$

$\sqrt{2 \cdot 2 \cdot 2 \cdot 11}$

$2\sqrt{22}$

10 $\sqrt{45}$

$45 = 9 \cdot 5 = 3 \cdot 3 \cdot 5$

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

$3\sqrt{5}$

11 $\sqrt{120}$

$120 = 10 \cdot 12 = 2 \cdot 2 \cdot 2 \cdot 3 \cdot 5$

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

$2\sqrt{30}$

12 $\sqrt{18}$

$18 = 2 \cdot 9 = 2 \cdot 3 \cdot 3$

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

$3\sqrt{2}$

![Math Antics Worksheets logo]

Name: _____

Date: _____

"Rationalizing the Denominator"

Instructions: Use the procedure you learned in the video to "rationalize" these denominators. In other words, re-write the fractions so that they don't have a root in the denominator.

1 $\dfrac{1}{2\sqrt{3}} \cdot \dfrac{\sqrt{3}}{\sqrt{3}}$

$\dfrac{\sqrt{3}}{2\cdot 3} = \boxed{\dfrac{\sqrt{3}}{6}}$

2 $\dfrac{2}{\sqrt{2}} \cdot \dfrac{\sqrt{2}}{\sqrt{2}}$

$\dfrac{2\sqrt{2}}{2} = \boxed{\sqrt{2}}$

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

$\boxed{\dfrac{2\sqrt{5}}{5}}$

4 $\dfrac{7}{3\sqrt{3}} \cdot \dfrac{\sqrt{3}}{\sqrt{3}}$

$\dfrac{\sqrt{3}}{3\cdot 3} = \boxed{\dfrac{7\sqrt{3}}{9}}$

5 $\dfrac{1}{2\sqrt{6}} \cdot \dfrac{\sqrt{6}}{\sqrt{6}}$

$\dfrac{\sqrt{6}}{2\cdot 6} = \boxed{\dfrac{\sqrt{6}}{12}}$

6 $\dfrac{1}{\sqrt{3}} \cdot \dfrac{\sqrt{3}}{\sqrt{3}}$

$\boxed{\dfrac{\sqrt{3}}{3}}$

7 $\dfrac{\sqrt{5}}{\sqrt{2}} \cdot \dfrac{\sqrt{2}}{\sqrt{2}}$

$\dfrac{\sqrt{5\cdot 2}}{2} = \boxed{\dfrac{\sqrt{10}}{2}}$

8 $\dfrac{4}{3\sqrt{7}} \cdot \dfrac{\sqrt{7}}{\sqrt{7}}$

$\dfrac{4\sqrt{7}}{3\cdot 7} = \boxed{\dfrac{4\sqrt{7}}{21}}$

9 $\dfrac{1}{2\sqrt{8}} \cdot \dfrac{\sqrt{8}}{\sqrt{8}}$

$\dfrac{\sqrt{8}}{2\cdot 8} = \boxed{\dfrac{\sqrt{8}}{16}}$ or $\boxed{\dfrac{\sqrt{2}}{8}}$ simplified

10 $\dfrac{\sqrt{6}}{3\sqrt{2}} \cdot \dfrac{\sqrt{2}}{\sqrt{2}}$

$\dfrac{\sqrt{12}}{3\cdot 2} = \boxed{\dfrac{\sqrt{12}}{6}}$ or $\boxed{\dfrac{\sqrt{3}}{3}}$ simplified

▶ Simplifying Square Roots • mathantics.com