

# Radicals Worksheet 1

For exercises 1-36, simplify each square root

1.  $\sqrt{64}$

2.  $\sqrt{4}$

3.  $\sqrt{1}$

4.  $\sqrt{100}$

What # times itself  
= 64?

(8)

(2)

5.  $\sqrt{8}$   
 Same as  $\sqrt{4} \cdot \sqrt{2}$   
 $\downarrow \quad \downarrow$   
 whole 2  $\sqrt{2}$  ← can't break down

6.  $\sqrt{45}$   
 Have to break out largest perfect square factor.  
 $\sqrt{9} \cdot \sqrt{5}$   
 $\downarrow \quad \downarrow$   
 $3\sqrt{5}$

7.  $\sqrt{50}$   
 Square Non  
 $\downarrow \quad \downarrow$   
 $5\sqrt{2}$

8.  $\sqrt{12}$   
 $\downarrow$   
 $\sqrt{4} \cdot \sqrt{3}$   
 $\downarrow \quad \downarrow$

Can't do  
 $\sqrt{6} + \sqrt{2}$   
 Not a Square

9.  $\sqrt{98}$

10.  $\sqrt{48}$

11.  $\sqrt{125}$

12.  $\sqrt{20}$

13.  $\sqrt{72}$

14.  $\sqrt{63}$

15.  $\sqrt{144}$

16.  $\sqrt{32}$

17.  $\sqrt{75}$

18.  $\sqrt{200}$

19.  $\sqrt{9}$

20.  $\sqrt{16}$

Cube Root  
# \* itself \* itself  
Simplify each root.

## Radicals Worksheet 2

1.  $\sqrt[3]{1}$

1

2.  $\sqrt[3]{27}$

↓  
3

3.  $\sqrt[3]{1000}$

4.  $\sqrt[3]{125}$

(because  $1 * 1 * 1 = 1$ ) (because  $3 * 3 * 3 = 27$ )

5.  $\sqrt[3]{24}$  break down, pull out a "cube" number  
 $\sqrt[3]{8 * 3}$   
 $\downarrow$   
 $2 \sqrt[3]{3}$

6.  $\sqrt[3]{54}$

$\downarrow \sqrt[3]{27} \cdot \sqrt[3]{2}$   
 $\downarrow$   
 $3 \sqrt[3]{2}$

7.  $\sqrt[3]{250}$

8.  $\sqrt[3]{6000}$

9.  $\sqrt{100}$

10.  $\sqrt[3]{100}$

11.  $\sqrt{64}$

12.  $\sqrt[3]{64}$

13.  $2\sqrt{1000}$

14.  $2\sqrt[3]{1000}$

15.  $\sqrt{1,000,000}$

16.  $\sqrt[3]{1,000,000}$

17.  $3\sqrt{128}$

18.  $3\sqrt[3]{128}$

19.  $8\sqrt{27}$

20.  $8\sqrt[3]{27}$