

# Simplifying Radical Expressions

Name: _____
Date: _____ / _____ / _____
Score: _____ / _____

Simplifying examples:

$$\sqrt{12} = \sqrt{2 \cdot 2 \cdot 3} = 2 \cdot \sqrt{3}$$

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

$$\sqrt{18x^3y^5} = \sqrt{2 \cdot 3 \cdot 3 \cdot x \cdot x \cdot x \cdot y^2 \cdot y^2 \cdot y} = 3|x|y^2\sqrt{2xy}$$

$$2\sqrt{24} = 2\sqrt{2 \cdot 2 \cdot 3} = 2 \cdot 2\sqrt{3} = 4\sqrt{3}$$

Simplify each radical expression.

1.  $\sqrt{28} =$

2.  $\sqrt{68} =$

3.  $\sqrt{60} =$

4.  $\sqrt{75} =$

5.  $\sqrt{162} =$

6.  $\sqrt{3} \cdot \sqrt{6} =$

7.  $\sqrt{2} \cdot \sqrt{5} =$

8.  $\sqrt{5} \cdot \sqrt{10} =$

9.  $\sqrt{6} \cdot \sqrt{14} =$

10.  $\sqrt{4a^2} =$

11.  $\sqrt{9x^2} =$

12.  $\sqrt{300a^4} =$

13.  $\sqrt{128c^2} =$

14.  $4\sqrt{10} \cdot 3\sqrt{6} =$

15.  $3\sqrt{8} \cdot 5\sqrt{2} =$

16.  $\sqrt{3x^2} \cdot 3\sqrt{3x^4} =$

17.  $\sqrt{20a^2b^4} =$

18.  $\sqrt{100x^3y} =$

19.  $\sqrt{24a^4b^3} =$

20.  $\sqrt{81x^4y^2} =$

21.  $\sqrt{150a^2b^2c} =$

22.  $\sqrt{72a^6b^3c^2} =$

23.  $\sqrt{45x^2y^5z^8} =$

24.  $\sqrt{98x^4y^6z^2} =$