

Simplifying Rational Expressions

Date _____ Period _____

Simplify.

1) $\sqrt{64xyz^2}$

2) $\sqrt{196}$

3) $\sqrt{108x^4y^3}$

4) $\sqrt[4]{405xy^8}$

5) $\sqrt[5]{96xy}$

6) $\sqrt[3]{1000x^6y^3}$

7) $\sqrt[7]{640x^5}$

8) $\sqrt{294a^2}$

9) $\sqrt[5]{-192xy^2z^8}$

10) $\sqrt[4]{96p^2}$

11) $\sqrt{36x^2}$

12) $\sqrt{392a^2b}$

13) $\sqrt{6}(5 + \sqrt{2})$

14) $-\sqrt{15}(-\sqrt{10} + 4)$

15) $2\sqrt{2}(5 + 2\sqrt{5})$

16) $2\sqrt{5}(3 - \sqrt{5})$

17) $\frac{\sqrt{2}}{\sqrt{25}}$

18) $\frac{\sqrt{4}}{2\sqrt{16}}$

19) $\frac{3\sqrt{9}}{\sqrt{16}}$

20) $\frac{\sqrt{4}}{\sqrt{16}}$

21) $-2\sqrt{20} - 3\sqrt{20} + 3\sqrt{18}$

22) $-\sqrt{54} - 2\sqrt{5} - \sqrt{54}$

23) $3\sqrt{5} - 2\sqrt{20} + 3\sqrt{20}$

24) $-3\sqrt{54} + 2\sqrt{6} + 3\sqrt{12}$

Simplifying Rational Expressions

Date _____ Period _____

Simplify.

$$1) \sqrt{64xyz^2}$$

$$8z\sqrt{xy}$$

$$2) \sqrt{196}$$

$$14$$

$$3) \sqrt{108x^4y^3}$$

$$6x^2y\sqrt{3y}$$

$$4) \sqrt[4]{405xy^8}$$

$$3y^2\sqrt[4]{5x}$$

$$5) \sqrt[5]{96xy}$$

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

$$6) \sqrt[3]{1000x^6y^3}$$

$$10x^2y$$

$$7) \sqrt[7]{640x^5}$$

$$2\sqrt[7]{5x^5}$$

$$8) \sqrt{294a^2}$$

$$7a\sqrt{6}$$

$$9) \sqrt[5]{-192xy^2z^8}$$

$$-2z\sqrt[5]{6xy^2z^3}$$

$$10) \sqrt[4]{96p^2}$$

$$2\sqrt[4]{6p^2}$$

$$11) \sqrt{36x^2}$$

$$6x$$

$$12) \sqrt{392a^2b}$$

$$14a\sqrt{2b}$$

$$13) \sqrt{6}(5 + \sqrt{2})$$

$$5\sqrt{6} + 2\sqrt{3}$$

$$14) -\sqrt{15}(-\sqrt{10} + 4)$$

$$5\sqrt{6} - 4\sqrt{15}$$

$$15) 2\sqrt{2}(5 + 2\sqrt{5})$$

$$10\sqrt{2} + 4\sqrt{10}$$

$$16) 2\sqrt{5}(3 - \sqrt{5})$$

$$6\sqrt{5} - 10$$

$$17) \frac{\sqrt{2}}{\sqrt{25}}$$

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

$$18) \frac{\sqrt{4}}{2\sqrt{16}}$$

$$\frac{1}{4}$$

$$19) \frac{3\sqrt{9}}{\sqrt{16}}$$

$$\frac{9}{4}$$

$$20) \frac{\sqrt{4}}{\sqrt{16}}$$

$$\frac{1}{2}$$

$$21) -2\sqrt{20} - 3\sqrt{20} + 3\sqrt{18}$$

$$-10\sqrt{5} + 9\sqrt{2}$$

$$22) -\sqrt{54} - 2\sqrt{5} - \sqrt{54}$$

$$-6\sqrt{6} - 2\sqrt{5}$$

$$23) 3\sqrt{5} - 2\sqrt{20} + 3\sqrt{20}$$

$$5\sqrt{5}$$

$$24) -3\sqrt{54} + 2\sqrt{6} + 3\sqrt{12}$$

$$-7\sqrt{6} + 6\sqrt{3}$$