

## Unit 5.3 Simplifying Radicals EXAMPLES

Period \_\_\_\_\_

**Simplify.**

1)  $\sqrt{128}$

2)  $\sqrt{16}$

3)  $\sqrt{147}$

4)  $2\sqrt{384}$

5)  $2\sqrt{48}$

6)  $4\sqrt{810}$

7)  $-5\sqrt{54}$

8)  $8\sqrt{320x^5}$

9)  $9\sqrt{288x}$

10)  $-4\sqrt{144m}$

11)  $9\sqrt{243x^5y^3}$

12)  $-\sqrt{486xy^3}$

13)  $-8\sqrt{128m^2n^4}$

14)  $-10\sqrt{63x^4y^5}$

15)  $-10\sqrt{392m^5p^3q}$

16)  $8\sqrt{245xy^5z^2}$

17)  $6\sqrt{500h^5j^5k^4}$

18)  $8\sqrt{24x^3y^2z^3}$

19)  $\sqrt{8} \cdot \sqrt{8}$

20)  $\sqrt{15} \cdot \sqrt{15}$

21)  $-5\sqrt{10} \cdot 4\sqrt{6}$

22)  $2\sqrt{10} \cdot 3\sqrt{20}$

23)  $4\sqrt{12v^3} \cdot 4\sqrt{3v}$

24)  $4\sqrt{6p^3} \cdot -5\sqrt{12p^3}$

25)  $3\sqrt{10p^2} \cdot -5\sqrt{10p^2}$

26)  $-4\sqrt{8n^2} \cdot 2\sqrt{2n^2}$

27)  $\frac{\sqrt{32}}{\sqrt{72}}$

28)  $\frac{\sqrt{5}}{\sqrt{80}}$

29)  $\frac{\sqrt{21}}{\sqrt{4}}$

30)  $\frac{\sqrt{42}}{\sqrt{4}}$

31)  $-\frac{6}{\sqrt{2}}$

32)  $\frac{\sqrt{7}}{\sqrt{2}}$

33)  $\frac{\sqrt{2}}{\sqrt{6}}$

34)  $\frac{\sqrt{48}}{\sqrt{30}}$

35)  $\frac{6\sqrt{5x^3y^3}}{6\sqrt{15x^4y^2}}$

36)  $\frac{4\sqrt{4v^4}}{7\sqrt{6v^2}}$

37)  $\frac{7\sqrt{8m^3n^2}}{2\sqrt{3m^2n^3}}$

38)  $\frac{7\sqrt{6a^4b}}{2\sqrt{7a^4b}}$

## Unit 5.3 Simplifying Radicals EXAMPLES

**Simplify.**

$$1) \sqrt{128}$$

$$8\sqrt{2}$$

$$2) \sqrt{16}$$

$$4$$

$$3) \sqrt{147}$$

$$7\sqrt{3}$$

$$4) 2\sqrt{384}$$

$$16\sqrt{6}$$

$$5) 2\sqrt{48}$$

$$8\sqrt{3}$$

$$6) 4\sqrt{810}$$

$$36\sqrt{10}$$

$$7) -5\sqrt{54}$$

$$-15\sqrt{6}$$

$$8) 8\sqrt{320x^5}$$

$$64x^2\sqrt{5x}$$

$$9) 9\sqrt{288x}$$

$$108\sqrt{2x}$$

$$10) -4\sqrt{144m}$$

$$-48\sqrt{m}$$

$$11) 9\sqrt{243x^5y^3}$$

$$81x^2y\sqrt{3xy}$$

$$12) -\sqrt{486xy^3}$$

$$-9y\sqrt{6xy}$$

$$13) -8\sqrt{128m^2n^4}$$

$$-64n^2m\sqrt{2}$$

$$14) -10\sqrt{63x^4y^5}$$

$$-30x^2y^2\sqrt{7y}$$

$$15) -10\sqrt{392m^5p^3q}$$

$$-140m^2p\sqrt{2mpq}$$

$$16) 8\sqrt{245xy^5z^2}$$

$$56y^2z\sqrt{5xy}$$

$$17) 6\sqrt{500h^5j^5k^4}$$

$$60h^2j^2k^2\sqrt{5hj}$$

$$18) 8\sqrt{24x^3y^2z^3}$$

$$16xyz\sqrt{6xz}$$

$$19) \sqrt{8} \cdot \sqrt{8}$$

$$8$$

$$20) \sqrt{15} \cdot \sqrt{15}$$

$$15$$

$$21) -5\sqrt{10} \cdot 4\sqrt{6}$$

$$-40\sqrt{15}$$

$$22) 2\sqrt{10} \cdot 3\sqrt{20}$$

$$60\sqrt{2}$$

$$23) 4\sqrt{12v^3} \cdot 4\sqrt{3v}$$

$$96v^2$$

$$24) 4\sqrt{6p^3} \cdot -5\sqrt{12p^3}$$

$$-120p^3\sqrt{2}$$

$$25) 3\sqrt{10p^2} \cdot -5\sqrt{10p^2}$$

$$-150p^2$$

$$26) -4\sqrt{8n^2} \cdot 2\sqrt{2n^2}$$

$$-32n^2$$

$$27) \frac{\sqrt{32}}{\sqrt{72}}$$

$$\frac{2}{3}$$

$$28) \frac{\sqrt{5}}{\sqrt{80}}$$

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

$$29) \frac{\sqrt{21}}{\sqrt{4}}$$

$$\frac{\sqrt{21}}{2}$$

$$30) \frac{\sqrt{42}}{\sqrt{4}}$$

$$\frac{\sqrt{42}}{2}$$

$$31) -\frac{6}{\sqrt{2}}$$

$$-3\sqrt{2}$$

$$32) \frac{\sqrt{7}}{\sqrt{2}}$$

$$\frac{\sqrt{14}}{2}$$

$$33) \frac{\sqrt{2}}{\sqrt{6}}$$

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

$$34) \frac{\sqrt{48}}{\sqrt{30}}$$

$$\frac{2\sqrt{10}}{5}$$

$$35) \frac{6\sqrt{5x^3y^3}}{6\sqrt{15x^4y^2}}$$

$$\frac{\sqrt{3xy}}{3x}$$

$$36) \frac{4\sqrt{4v^4}}{7\sqrt{6v^2}}$$

$$\frac{4v\sqrt{6}}{21}$$

$$37) \frac{7\sqrt{8m^3n^2}}{2\sqrt{3m^2n^3}}$$

$$\frac{7\sqrt{6mn}}{3n}$$

$$38) \frac{7\sqrt{6a^4b}}{2\sqrt{7a^4b}}$$

$$\frac{\sqrt{42}}{2}$$