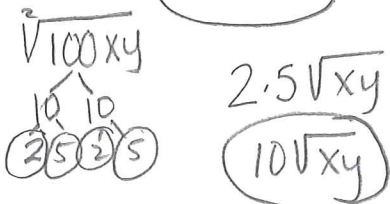


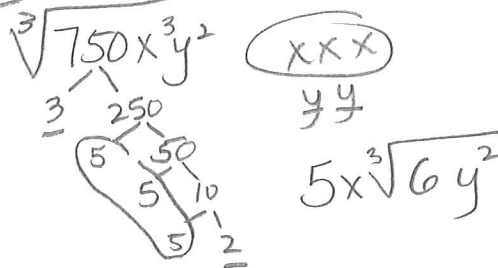
Chapter 6 Test Review

Multiple Choice: Circle the letter that corresponds to the correct answer. For #1-8, Simplify.

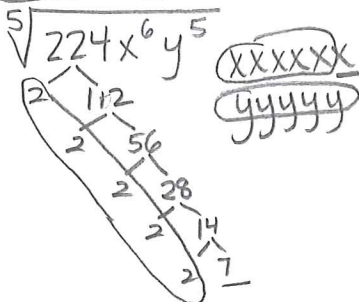
- 1) $\sqrt{100xy}$
 A) $10x\sqrt{2xy}$
 B) $14y^2x\sqrt{2x}$
 C) $4x^2\sqrt{5y}$
 D) $10\sqrt{xy}$



- 2) $\sqrt[3]{750x^3y^2}$
 A) $3\sqrt[3]{6xy}$
 B) $5xy^2\sqrt[3]{3y}$
 C) $5x\sqrt[3]{6y^2}$
 D) $2xy^2\sqrt[3]{5}$



- 3) $\sqrt[5]{224x^6y^5}$
 A) $2y\sqrt[5]{7x^4y^2}$
 B) $2y\sqrt[5]{8x^3y^2}$
 C) $2\sqrt[5]{4xy^2}$
 D) $2xy\sqrt[5]{7x}$



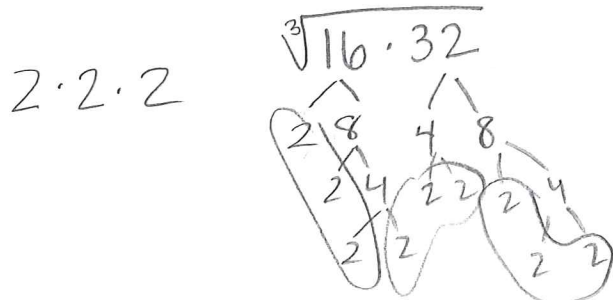
$2xy\sqrt[5]{7x}$

- 4) $3\sqrt{2} - 1\sqrt{2}$
 A) $2\sqrt{2}$
 B) $-2\sqrt{2}$
 C) $3\sqrt{2}$
 D) $5\sqrt{2}$

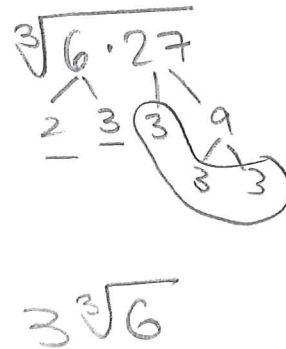
- 5) $-2\sqrt{5} - 1\sqrt{5}$
 A) $-\sqrt{5}$
 B) $\sqrt{5}$
 C) $-3\sqrt{5}$
 D) 0

- 6) $-3\sqrt{2} + 2\sqrt{2}$
 A) $-8\sqrt{2}$
 B) $-6\sqrt{2}$
 C) $-\sqrt{2}$
 D) $-3\sqrt{2}$

- 7) $\sqrt[3]{16} \cdot \sqrt[3]{32}$
 A) 8
 B) $\sqrt[3]{36}$
 C) $2\sqrt[3]{6}$
 D) 512



- 8) $\sqrt[3]{6} \cdot \sqrt[3]{27}$
 A) $\sqrt[3]{50}$
 B) $\sqrt[3]{33}$
 C) $3\sqrt[3]{6}$
 D) 162



For #9-10, write in exponential form.

9) $\sqrt[2]{n^4}$

- A) $n^{\frac{1}{3}}$ B) $(2n)^{\frac{1}{2}}$
 C) $n^{\frac{1}{2}}$ D) n^2

10) $(\sqrt[3]{2n})^2$

- A) $(5n)^{\frac{1}{2}}$ B) $(2n)^{\frac{3}{2}}$
 C) $(2n)^{\frac{2}{3}}$ D) $2^{\frac{1}{3}} \cdot n^{\frac{2}{3}}$

For #11-13, Simplify.

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

- A) $\sqrt{30} + 4$ B) $4\sqrt{2} + 10$
 C) 12 D) $\sqrt{15} - 3\sqrt{10}$

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

$\sqrt{15} - 3\sqrt{10}$

12) $-4\sqrt{5}(\sqrt{10} - 4\sqrt{6})$

- A) $-20\sqrt{2} + 16\sqrt{30}$
 B) $-15\sqrt{5} + 8$
 C) $9\sqrt{5} - 15\sqrt{2}$
 D) $3\sqrt{3} + \sqrt{30}$

$-4\sqrt{5 \cdot 10} + 4 \cdot 4\sqrt{5 \cdot 6}$

$-4 \cdot 5\sqrt{2} + 16\sqrt{5 \cdot 2 \cdot 3}$

$-20\sqrt{2} + 16\sqrt{30}$

13) $\sqrt{10}(3\sqrt{6} + 2\sqrt{24})$

- A) 6 B) $6\sqrt{40}$
 C) $20\sqrt{2} + 3\sqrt{8}$ D) $14\sqrt{15}$

$3\sqrt{10 \cdot 6} + 2\sqrt{10 \cdot 24}$

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

$6\sqrt{15} + 8\sqrt{15}$

$14\sqrt{15}$

Simplify completely. Your answer should contain only positive exponents.

14) $\frac{(m^9 n^{-6})^{-\frac{1}{3}} \cdot m^0}{m^2}$

$\frac{m^{-3} n^2}{m^2}$

$\frac{n^2}{m^2 m^3}$

$\rightarrow \frac{n^2}{m^5}$

15) $\frac{(yx^{\frac{3}{2}} \cdot yx^{-\frac{1}{2}})^{-2}}{yx^0}$

$\frac{y^{-2} x^{-3} \cdot y^{-2} x^1}{y}$

$\frac{x}{y \cdot y^2 x^3 y^2} \rightarrow \frac{1}{x^2 y^5}$

$$16) \left(\frac{y^{\frac{1}{4}} y^{\frac{1}{3}}}{x^2 y^0} \right)^{-12}$$

$$\frac{y^{-3} y^{-4}}{x^{-24}}$$

$$\frac{x^{24}}{y^7 y^4}$$

$$\frac{x^{24}}{y^7}$$

Solve each equation for x.

$$17) \sqrt{9 - 13x} + 8 = 18$$

$$(\sqrt{9 - 13x})^2 = (10)^2$$

$$\begin{aligned} 9 - 13x &= 100 \\ -13x &= 91 \end{aligned}$$

$$x = -7$$

$$19) -3 = -8 + \sqrt[3]{3x - 10}$$

$$(5)^3 = (\sqrt[3]{3x - 10})^3$$

$$125 = 3x - 10$$

$$\frac{135}{3} = \frac{3x}{3}$$

$$x = 45$$

$$21) (-9 - 2x)^{\frac{1}{3}} = 3$$

$$-9 - 2x = 27$$

$$-2x = 36$$

$$x = -18$$

Perform the indicated operation.

$$23) f(x) = \sqrt{x} + 4$$

$$g(x) = \sqrt{x} + 2$$

Find $(f + g)(x)$

$$f(x) + g(x)$$

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

$$2\sqrt{x} + 6$$

$$18) (8)^2 = (\sqrt{x - 10})^2$$

$$64 = x - 10$$

$$x = 74$$

$$20) 5^2 = (x + 5)^{\frac{1}{2}}$$

$$25 = x + 5$$

$$x = 20$$

$$22) -243 + (2x - 5)^{\frac{3}{4}} = 100$$

$$(2x - 5)^{\frac{3}{4}} = 343$$

$$2x - 5 = 49$$

$$2x = 54$$

$$x = 27$$

$$24) f(x) = \sqrt{x} + 4$$

$$g(x) = \sqrt{x} + 2$$

Find $(f \cdot g)(x)$

$$f(x) \cdot g(x)$$

$$(\sqrt{x} + 4) \cdot (\sqrt{x} + 2)$$

$$x + 2\sqrt{x} + 4\sqrt{x} + 8$$

$$x + 6\sqrt{x} + 8$$