

Algebra 2 Year 2
Individual Test 6.1-6.3

Name _____
 Date _____ Hour _____

Simplify each expression. Use only positive exponents. SHOW ALL WORK

1. $(5x^2y)(-4x^5y^4)$

$-20x^7y^5$

2. $(2x^3y^{-4})^3$

$\frac{8x^9y^{-12}}{y^{12}}$

1. $\frac{-20x^7y^5}{y^3}$ 3

2. $\frac{8x^9}{y^{12}}$ 3

3. $\frac{4x^{-4}y^5}{(3x^3y^{-2})^2} = \frac{4x^{-4}y^5}{9x^6y^{-4}}$

$\frac{4y^9}{9x^{10}}$

4. $\left(\frac{4x^3y^{-2}}{x^{-4}y^3}\right)^{-3}$

$\left(\frac{4x^7}{y^5}\right)^{-3} = \frac{y^{15}}{64x^{21}}$

3. $\frac{4y^9}{9x^{10}}$ 3

4. $\frac{y^{15}}{64x^{21}}$ 3

5. Find the cube roots of -125 -5

5. -5 1

6. Find the fourth roots of -81 No Sol.

6. No Sol. 1 1 1 1

7. Find the real roots of $\sqrt[4]{0.0016}$ ± 0.2

7. ± 0.2 2

8. Find the real roots of $\sqrt{64}$ ± 8

8. ± 8 2

Simplify each radical expression. Assume that all variables are positive.

9. $\sqrt{360x^{18}}$

$3 \sqrt{120}$
 $3 \sqrt{40}$
 $2 \sqrt{10}$

$6x^9\sqrt{10}$

9. $6x^9\sqrt{10}$ 2

Multiply or divide and simplify. RATIONALIZE THE DENOMINATORS!! Assume that all variables are positive. SHOW ALL WORK!

10. $\sqrt[4]{81x^5y^4} \cdot \sqrt[4]{32x^3y}$

$6x^2y\sqrt[4]{2y}$

11. $2^3\sqrt{2xy^2} \cdot \sqrt[3]{4x^2y^5}$

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

10. $6x^2y\sqrt[4]{2y}$ 4

11. $4xy^2\sqrt[3]{y}$ 4

12. $\frac{\sqrt[3]{48x^3y^2}}{\sqrt[3]{6x^4y}} = 3\sqrt{\frac{48x^3y^2}{6x^4y}} = 3\sqrt{\frac{8y}{x}}$

$\frac{2\sqrt[3]{y}}{\sqrt[3]{x}} \cdot \sqrt[3]{x^2} = \frac{2\sqrt[3]{x^2y}}{x}$

13. $\frac{\sqrt{48x^3}}{\sqrt{3xy^2}} = \sqrt{\frac{48x^3}{3xy^2}}$

$= \frac{\sqrt{16x^2}}{\sqrt{y}} = \frac{4x}{y}$

12. $\frac{2\sqrt[3]{x^2y}}{x}$ 4

13. $\frac{4x}{y}$ 4

$$14. \frac{\sqrt{5}}{\sqrt{8x}} = \frac{\sqrt{5}}{\sqrt{2x}} \cdot \frac{\sqrt{2x}}{\sqrt{2x}}$$

$$\frac{\sqrt{10x}}{4x}$$

$$15. \frac{\sqrt[3]{12ab^3c^2}}{\sqrt[3]{10a^3bc}} = \frac{\sqrt[3]{120ab^3c^2}}{\sqrt[3]{10a^3bc}}$$

$$\frac{\sqrt[3]{12b^2c}}{a} = \frac{\sqrt[3]{12b^2c}}{\sqrt[3]{a^3}} \cdot \frac{\sqrt[3]{a}}{\sqrt[3]{a}}$$

$$= \frac{\sqrt[3]{12abc^2}}{a}$$

$$14. \frac{\sqrt{10x}}{4x}$$

$$\frac{\sqrt[3]{12abc^2}}{a}$$

Simplify each expression completely. Assume that all variables are positive. SHOW ALL WORK!

$$16. 9\sqrt[3]{4x} + \sqrt[3]{4x}$$

$$10\sqrt[3]{4x}$$

$$17. \sqrt{75} - 4\sqrt{18} + 2\sqrt{32}$$

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

$$5\sqrt{3} - 8\sqrt{3} + 6\sqrt{3}$$

$$3\sqrt{3}$$

$$18. (4 - 2\sqrt{3})(4 + 2\sqrt{3})$$

$$16 - 12$$

$$= 4$$

$$19. (\sqrt{3} + 6)^2$$

$$(\sqrt{3} + 6)(\sqrt{3} + 6)$$

$$3 + 6\sqrt{3} + 6\sqrt{3} + 36$$

$$39 + 12\sqrt{3}$$

$$20. (4 + \sqrt{5})(2 - 3\sqrt{5})$$

$$8 - 12\sqrt{5} + 8\sqrt{5} - 60$$

$$-52 - 4\sqrt{5}$$

$$21. \frac{4\sqrt{6}}{3-\sqrt{5}} \cdot \frac{(3+\sqrt{5})}{(3+\sqrt{5})}$$

$$\frac{12\sqrt{6} + 4\sqrt{30}}{9-5}$$

$$= \frac{12\sqrt{6} + 4\sqrt{30}}{4} = 3\sqrt{6} + \sqrt{30}$$

$$\begin{array}{r} 56 \\ 32 \\ \hline 2 \end{array}$$

$$\begin{array}{r} 61 \\ 32 \\ \hline 2 \end{array}$$

$$\begin{array}{r} 56 \\ 34 \\ \hline 2 \end{array}$$

$$\begin{array}{r} 56 \\ 45 \\ \hline 16 \end{array}$$

$$\begin{array}{r} 56 \\ 27 \\ \hline 34 \end{array}$$

$$\begin{array}{r} 61 \\ 39 \\ \hline 22 \end{array}$$

$$\begin{array}{r} 56 \\ 43 \\ \hline 18 \end{array}$$

$$\begin{array}{r} 56 \\ 13 \\ \hline 48 \end{array}$$

$$\begin{array}{r} 61 \\ 19 \\ \hline 42 \end{array}$$

