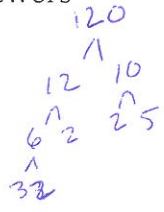


Algebra Unit 3 Summative Review

Simplify. Circle your answers

1. $5\sqrt[3]{120x^2y^5z^3}$



$5 \cdot 2 \cdot 2 \cdot 2 \cdot 3 \cdot 5$

$10yz\sqrt[3]{15x^2y^2}$

2. $(x^6)^{-3}$

$\frac{1}{x^{18}}$

3. $(7x^3 - 5 + 7x^2) - (7x^2 + 9x - 9)$

~~$7x^3 - 5 + 7x^2 - 7x^2 - 9x + 9$~~

$7x^3 - 9x + 4$

4. $(4x - 2)(3x + 8)$

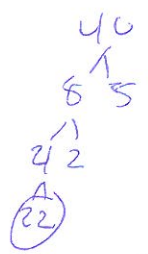
$12x^2 + 32x - 6x - 16$

$12x^2 + 26x - 16$

5. $5\sqrt{5} \cdot -4\sqrt{8}$

$-20\sqrt{40}$

$-40\sqrt{10}$



6. $\frac{(5f^4g^5)^2(fg)}{f^7g^3} = 25f^8g^{10}$

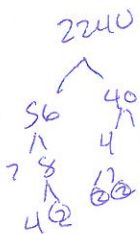
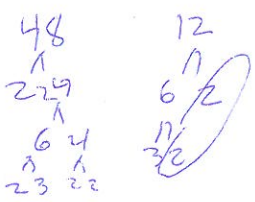
$\frac{25f^9g^{11}}{f^1g^3} = 25f^2g^8$

7. $3\sqrt{2}(4\sqrt{24} + 4\sqrt{6})$

$12\sqrt{48} + 12\sqrt{12}$

$48\sqrt{3} + 24\sqrt{3}$

$72\sqrt{3}$



8. $\frac{\sqrt{7}}{\sqrt{4}} \div \frac{\sqrt{10}}{\sqrt{8}}$

$\frac{\sqrt{7}}{\sqrt{4}} \cdot \frac{\sqrt{8}}{\sqrt{10}} = \frac{\sqrt{56}}{\sqrt{40}} \cdot \frac{\sqrt{40}}{\sqrt{40}} = \frac{8\sqrt{35}}{40}$

$\frac{\sqrt{35}}{5}$

9. $\left(\frac{12ab^4c^8}{16a^5bc^6}\right)^{-3} \left(\frac{ab^4c^5}{b^5c^2}\right)$

$\left(\frac{16a^5bc^6}{12ab^4c^8}\right)^3$

$\left(\frac{4a^4}{3b^3c^2}\right)^3$

$\frac{64a^{12}}{27b^9c^6} \cdot \frac{ab^4c^5}{b^5c^2} = \frac{64a^{13}b^4c^5}{27b^{14}c^8}$

$\frac{64 a^3}{27 b^{10} c^3}$

10. $\frac{3x^2+5x+2}{(x+1)}$

$(3x^2+3x) \div 2x+2$

$3x(x+1) + 2(x+1)$

~~$\frac{(3x+2)(x+1)}{x+1}$~~

$3x+2$

$$11. -2\sqrt{2} + 20\sqrt{18}$$

$$-2\sqrt{2} + 60\sqrt{2}$$

$$\boxed{58\sqrt{2}}$$

$$\begin{array}{c} 18 \\ \wedge \\ 9 \cdot 2 \\ \parallel \\ 3 \cdot 3 \end{array}$$

$$12. \frac{4\sqrt{10}}{3\sqrt{5}} \cdot \frac{\sqrt{5}}{\sqrt{5}} = \frac{4\sqrt{50}}{15} = \frac{20\sqrt{2}}{15}$$

$$\boxed{\frac{4\sqrt{2}}{3}}$$

$$13. \left(\frac{x^4 y^2 z}{x y^9 z}\right)^{-2}$$

$$\left(\frac{x y^2 z}{x^4 y^7 z}\right)^2$$

$$\left(\frac{y^2}{x^3}\right)^2 = \boxed{\frac{y^4}{x^6}}$$

$$14. \left(\frac{abc}{ab^4}\right)^0 (-3a^4 b^{-2} c)^{-2}$$

$$\frac{1}{(-3a^4 b^{-2} c)^2} = \boxed{\frac{b^4}{9a^8 c^2}}$$

Factor completely. If not factorable, write, "prime."

$$15. x^2 - 13x + 30$$

$$(x-3)(x-10)$$

$$\begin{array}{c} -13 \\ \times \\ -3 \quad -10 \\ \hline 30 \end{array}$$

$$16. 30a^5 b^2 + 15a^2 b^2 - 3ab$$

$$3ab(10a^4 b + 5ab - 1)$$

$$17. 6x^2 + 7x - 10$$

$$(6x^2 - 5x)(12x - 10)$$

$$x(6x-5) \cdot 2(6x-5)$$

$$\boxed{(x+2)(6x-5)}$$

$$\begin{array}{c} 7 \\ \times \\ -5 \quad 12 \\ \hline -60 \end{array}$$

$$18. 81x^2 - 16$$

$$(9x+4)(9x-4)$$

$$19. (2x^3 - 3x^2) - 4x + 6$$

$$x^2(2x-3) - 2(2x-3)$$

$$\boxed{(x^2-2)(2x-3)}$$