

5.1 - 5.2 Quiz Review

Learning Target 5A

1. $10x^2y^3(-5xy)$

Multiply coefficients
Add exponents

$$-50x^3y^4$$

3. $\frac{2mn^2(3m^2n)^2}{12m^3n^4}$

$$\frac{2mn^2(9m^4n^2)}{12m^3n^4} = \frac{18m^5n^4}{12m^3n^4} = \frac{3m^2}{2}$$

Learning Target 5B

5. $(6x^2 - 3x + 2) - (4x^2 + x - 3)$

$$2x^2 - 4x + 5$$

7. $(n^2 + 5n - 1)(2n^2 - 3)$

$$(2n^2 - 3)(n^2 + 5n - 1)$$

$$2n^4 + 10n^3 - 2n^2 - 15n + 3$$

$$2n^4 + 7n^3 - 2n^2 - 15n + 3$$

Negative
Exponent =
Reciprocal

2. $\left(\frac{a^2b}{a^{-5}b^3}\right)^{-1} = \frac{a^{-3}b^2}{a^2b}$

Subtract
Exponents

$$a^{-5}b = \frac{b}{a^5}$$

4. $\frac{x^{-2}y^2}{x^4y^{-4}} = x^{-6}y^2 = \frac{y^2}{x^6}$

6. $(-2f^2 - 3f - 5) + (-2f^2 - 3f + 8)$

$$-4f^2 - 6f + 3$$

8. $(3w + 1)^2 (3w + 1)$

$$9w^2 + 3w + 3w + 1$$

$$9w^2 + 6w + 1$$

Learning Target 5C

9.
$$\frac{60a^2b^3 - 48b^4 + 84a^5b^2}{12ab^2}$$

$$\frac{6a^2b^3}{12ab^2} - \frac{48b^4}{12ab^2} + \frac{84a^5b^2}{12ab^2}$$

$$\frac{ab}{2} - \frac{4b^2}{a} + 7a^4$$

Use long division to find the quotient.

11. $(2x^2 - 5x - 3) \div (x - 3)$

$$\begin{array}{r} x-3 \overline{) 2x^2 - 5x - 3} \\ \underline{-(2x^2 - 6x)} \\ x - 3 \\ \underline{-(x - 3)} \\ 0 \end{array}$$

Use synthetic division to find the quotient.

13. $(n^3 + 3n^2 - 5n - 4) \div (n + 4)$

$$\begin{array}{r|rrrr} -4 & 1 & 3 & -5 & -4 \\ & \downarrow & -4 & 4 & 4 \\ \hline & 1 & -1 & -1 & 0 \\ & x^2 & x & \text{constant} & \text{remainder} \end{array}$$

$$\boxed{x^2 - x - 1}$$

10.
$$\frac{18a^3 + 30a^2}{3a}$$

$$\frac{18a^3}{3a} + \frac{30a^2}{3a}$$

$$6a^2 + 10a$$

12. $(t^3 - 6t^2 + 1) \div (t + 2)$

$$\begin{array}{r} t+2 \overline{) t^3 - 6t^2 + 0t + 1} \\ \underline{-(t^3 + 2t^2)} \\ -8t^2 + 0t \\ \underline{-(-8t^2 - 16t)} \\ 16t + 1 \\ \underline{-(16t + 32)} \\ -31 \end{array}$$

14. $(g^4 - 3g^2 - 18) \div (g - 2)$

$$\begin{array}{r|rrrrr} 2 & 1 & 0 & -3 & 0 & -18 \\ & \downarrow & 2 & 4 & 2 & 4 \\ \hline & 1 & 2 & 1 & 2 & -14 \\ & g^3 & g^2 & g & \text{constant} & \text{remainder} \end{array}$$

$$\boxed{g^3 + g^2 + g + 2 - \frac{14}{g-2}}$$