

6.7 Dividing Polynomials

Recall: To multiply with the same base - *ADD THE Exponents*

What does $\frac{x^5}{x^3}$ mean? $\frac{\cancel{x} \cdot \cancel{x} \cdot \cancel{x} \cdot x \cdot x}{\cancel{x} \cdot \cancel{x} \cdot \cancel{x}}$
 $\boxed{x^2}$

What about: $\frac{y^9}{y^4}$ $\frac{y y y y y y y y y}{y y y y}$
 y^5

$$\boxed{\frac{x^a}{x^b} = x^{a-b}}$$

$$1. \frac{x^9}{x^5} = x^4$$

$$2. \frac{y^5}{y} = y^4$$

$$3. \frac{c^5}{c^5} = c^0 = 1$$

$$4. \frac{a^{12}}{a^8} = a^4$$

$$5. \frac{r^{10}}{r^9} = r$$

$$6. \frac{y^{11}}{y} = y^{10}$$

$$7. \frac{3^7}{3^5} = 3^2 = 9$$

$$8. \frac{h^{10}}{h^7} = h^3$$

$$9. \frac{4^6}{4^6} = 4^0 = 1$$

$$10. \frac{9^5}{9} = 9^4$$

$$11. \frac{m^6}{m} = m^5$$

$$12. \frac{x^{15}}{x^{10}} = x^5$$

Monomial Divided by a Monomial

1. Divide coefficients
2. Subtract exponents on same base terms

Examples:

$$13. \frac{-30x^6}{2x^4} = -15x^2$$

$$14. \frac{-21a^5b^4}{-3a^4b} = 7ab^3$$

$$15. \frac{12y^2z^2}{4y^2z} = 3z$$

$$16. \frac{24a^5}{-3a^2} = -8a^3$$

$$17. \frac{-18x^3y^2}{-6x^2y} = 3xy$$

$$18. \frac{20a^3c^4d^2}{-5a^3c^3} = -4cd^2$$

HOMEWORK

Worksheet - HW 6.7