

Pre-Algebra

Aim: How do we divide monomials? How do we divide polynomials by monomials?

Do Now: Write as a single power.

a. $6^4 \div 6^3$

6

b. $8^7 \div 8^1$

8^6

c. $x^5 \div x^2$

x^3

d. $\frac{10y^3}{2y^2}$

$5y$

Dividing Monomials

1st Divide Coefficients

2nd Divide Variables (subtract exponents)

Examples:

1. $\frac{8x^4}{2x^2}$

$4x^2$

2. $\frac{18x^4}{9x^1}$

$2x^3$

3. $\frac{24x^5y^2}{6xy^1}$

$4x^4y$

4. $\frac{22x^5y^7z^9}{11x^2yz^3}$

$2x^3y^6z^6$

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

9

6. $\frac{100x^2y}{50x}$

$2xy$

7. $\frac{30abc}{6ab}$

$5c$

8. $\frac{-32y^3x^2}{4yx^1}$

$-8y^2x$

9. $\frac{(-4a)(7a^4)}{14a^3}$

$\frac{-28a^5}{14a^3}$
 $-2a^2$

Dividing Polynomials by Monomials

Divide each term of the polynomial in the numerator by the monomial denominator.

Examples:

$$10. \frac{6x^2 + 9x}{3}$$

$$2x^2 + 3x$$

$$11. \frac{12a + 3b}{3}$$

$$4a + b$$

$$12. \frac{18a^2b + 12ab^2}{6a}$$

$$3ab + 2b^2$$

$$13. \frac{x^4 - 7x^3}{x^2}$$

$$x^2 - 7x$$

$$14. \frac{12x^3 + 6x^2 - 3x}{3x}$$

$$4x^2 + 2x - 1$$

$$15. \frac{15a^2b - 20ab^2}{5ab}$$

$$3a - 4b$$

$$16. \frac{8x^2y^3 + 20x^3y^4 - 24x^4y}{-4x^2y}$$

$$-2y - 5xy^3 + 6x^2$$

$$17. \frac{-20a^3b^6 + 15a^2b^4 - 35a^4b^3}{-5ab^2}$$

$$4a^2b^4 - 3ab^2 + 7a^3b$$