

## Chapter 6 section 4 Division of Polynomials

### Dividing a Monomial by a Monomial

Example:

$$a) \frac{30x^{10}}{5x^4}$$

Divide the coefficients and subtract the exponents

$$\frac{30}{5} \cdot \frac{x^{10}}{x^4}$$

$$6 \cdot x^{10-4}$$

$$6x^6$$

try:

$$a) \frac{12x^2y}{6x^3y^3}$$

$$b) \frac{27ab^3}{9ab}$$

Divide a polynomial by a monomial

- Divide each term of the polynomial by the monomial

$$(28x^3 - 7x^2 - 16x) \div (4x^2)$$

Another way to see the same problem

$$\frac{28x^3 - 7x^2 - 16x}{4x^2}$$

Divide each term in the polynomial (numerator) by the monomial (denominator)

$$\frac{28x^3}{4x^2} - \frac{7x^2}{4x^2} - \frac{16x}{4x^2}$$

Simplify each fraction

$$7x - \frac{7}{4} - \frac{4}{x}$$

No negative exponents

Try:

a) 
$$\frac{25x^3 + 50x^2 - 40x - 10}{5x}$$

b) 
$$\frac{36x^4y^3 - 18x^3y^2 - 12x^2y}{6x^3y^3}$$