



4.7.a Dividing a Polynomial

Need To Know



- Recall the distributive property
- Recall dividing fractions
- Divide a polynomial by a monomial



The Distributive Property

Recall:

$$a(b + c) = ab + ac$$

Also:

$$(b + c)a = ba + ca$$



The Distributive Property

With a new twist:

$$(b + c) \div a = b \div a + c \div a$$

$$\frac{b + c}{a} =$$



Divide a Polynomial by a Mono

$$(5x^2 - 10) \div 5.$$

$$\frac{8x^3 - 12x^2}{4x}$$

Divide a Polynomial by a Mono

$$(9x^3y^2 - 12x^2y^3) \div (-9xy) \quad \frac{21x^3y^2 - 14x^2y^2 + 7x^2y^3}{7x^2y}$$

4.7.b Dividing Polynomials

Need To Know

- Recall long division
- Divide a polynomial by a polynomial





Recall Long Division

$$24 \overline{)8580}$$

Steps for Division

- 1.
- 2.
- 3.
- 4.
- 5.



Polynomial Division

$$x - 2 \overline{)x^2 - 5x + 6}$$

Steps for Division

1. Guess
2. Multiply
3. Subtract
4. Bring Down
5. Repeat



Polynomial Division

$$\frac{8x^2 - 6x - 5}{2x - 3}$$

Steps for Division

1. Guess
2. Multiply
3. Subtract
4. Bring Down
5. Repeat



Polynomial Division

$$\frac{2x^3 - 2x + 1}{2x + 4}$$

Steps for Division

1. Guess
2. Multiply
3. Subtract
4. Bring Down
5. Repeat



Polynomial Division

$$\frac{t^4 - 2t^2 + 4t - 5}{t^2 - 3}$$

Steps for Division

1. Guess
2. Multiply
3. Subtract
4. Bring Down
5. Repeat