Unit 5 Day 3
5-3 Products + Quotients of Monomials

Simplify: 1) $(3x^2 - 4x + 7) - (x^2 - 8x + 5)$

$= 3x^2 - 4x + 7 - x^2 + 8x - 5$

$= 2x^2 + 4x + 2$

2) $(2x^2y^2 - 4x^2y + xy) - (x^2y^2 - 3x^2y - 2xy)$

$= 2x^2y^2 - 4x^2y + xy - x^2y^2 + 3x^2y + 2xy$

$= x^2y^2 - x^2y + 3xy$

Monomial Products

1) $3x \cdot 5x \quad (3x)(5x)$

$= 15x^2$

2) $-2x^2 \cdot 3x^3$

$= -6x^5$

3) $(6x^2y)(-2xy^5)$

$= -12x^3y^6$

4) $(2x^2)^3(3x)$

$= 2^3x^6 \cdot 3x$

$= 8x^6 \cdot 3x$

$= 24x^7$

Quotients of Monomials

5) $\dfrac{42x^5}{7x^3} = 6x^2$

6) $\dfrac{24x^7}{18x^6} = \dfrac{4x}{3}$

7) $\dfrac{9x^6}{15x^9} = \dfrac{3}{5x^3} \left(= \dfrac{3x^{-3}}{5} \right)$

Product of Monomial and Polynomial (Distribution)

8) $3(4x-5) = 12x - 15$

9) $x(7x-12) = 7x^2 - 12x$

10) $-2x^2(3x^2+6x-5) = -6x^4 - 12x^3 + 10x^2$

Practice 5-3