Algebra 1 8.2

Multiply a polynomial by a monomial

Solve equations involving the product of a monomial and a polynomial

monomial

polynomial

distributive property

like terms – combine

Whiteboards

5 in a row (if time)

Example 2 Simplify Expressions

Simplify $2p(-4p^2 + 5p) - 5(2p^2 + 20)$.

$2p \cdot -4p^2 + 2p \cdot 5p + -5 \cdot 2p^2 + -5 \cdot 20$

$-8p^3 + 10p^2 + -10p^2 + -100$

$-8p^3 + 0p^2 + -100$

Distributive property
Combine like terms

Simplify each expression.

2A. $3(5x^2 + 2x - 4) - 1x(7x^2 + 2x - 3)$

$15x^2 + 6x + -12 + -7x^3 + -2x^2 + 3x$

$-7x^3 + 13x^2 + 9x + -12$

2B. $15t(10y^3t^5 + 5y^2t) + 2y(yt^2 + 4y^2)$

$150y^3t^6 + 75y^2t^2 + 2y^2t^2 + 8y^3$

$150y^3t^6 + 73y^2t^2 + 8y^3$

Solve means x=

Example 4 Equations with Polynomials on Both Sides

Solve $2a(5a-2)+3a(2a+6)+8=a(4a+1)+2a(6a-4)+50.$

$10a^2-4a+6a^2+18a+8=4a^2+a+12a^2-8a+50$

$16a^2+14a+8=16a^2+7a+50$

$-16a^2+7a-8 \quad -16a^2+7a-8$

$\frac{21a}{21}=\frac{42}{21} \quad a=2$

Distributive property
Like terms
Zero pairs
x=

GuidedPractice

Solve each equation.

4A. $2x(x + 4) + 7 = (x + 8) + 2x(x + 1) + 12$

$2x^2+8x+7 = x+8+2x^2+2x+12$

$2x^2+8x+7 = 2x^2+3x+20$

$-2x^2-3x-7 \quad -2x^2-3x-7$

$\frac{5x}{5} = \frac{13}{5}$

$x = 2.6$

4B. $8(8 + 3) - 8(8 - 4) = 9(8) - 16$

$88 + -32 = 72 - 16$

$56 = 56$:)

$8^2 + 32 + -8^2 + 4(8) = 9(8) + -16$

$7(8) = 9(8) + -16$

$-9(8) \quad -9(8)$

$\frac{-2(8)}{-2} = \frac{-16}{-2}$

$8 = 8$

12. $-6(11 - 2c) = 7(-2 - 2c)$

$-66 + 12c = -14 - 14c$
$+66 \quad +14c \quad +66 \quad +14c$

$\frac{26c}{26} = \frac{52}{26}$

$c = 2$

$-66 + 12c = -14 - 14c$
$+14 \quad +12c \quad +14 \quad -12c$

$\frac{-52}{-26} = \frac{-26c}{-26}$

$2 = c$

$-66 + 12c = -14 - 14c$
$-12c \quad -12c$

$-26c$

13. $t(2t + 3) + 20 = 2t(t - 3)$