L8-2 Multiplying a Polynomial by a Monomial

Horizontal Method

$6y(4y^2 - 9y - 7)$

$(6y \cdot 4y^2) + (6y \cdot -9y) + (6y \cdot -7)$

$24y^3 - 54y^2 - 42y$

mult. coefficients
add exponents

Combine Like terms if necessary

$6y(4y^2 - 9y - 7)$

Vertical Method

$4y^2 - 9y - 7$

$\cdot \quad 6y$

$24y^3 - 54y^2 - 42y$

$3x(2x^2 + 3x + 5)$

Horizontal Method

$3x(2x^2 + 3x + 5)$

$6x^3 + 9x^2 + 15x$

Vertical Method

$2x^2 + 3x + 5$

$\cdot \quad 3x$

$6x^3 + 9x^2 + 15x$

Simplify Expressions

$3(2t^2 - 4t - 15) + 6t(5t + 2)$

$6t^2 - 12t - 45 + 30t^2 + 12t$

$(6t^2 + 30t^2) + (-12t + 12t) + (-45)$

$36t^2 - 45$

1. Distribute
2. Combine like terms if you can
3. Simplified answer

$5(4y^2 + 5y - 2) + 2y(4y + 3)$

$20y^2 + 25y - 10 + 8y^2 + 6y$

$(20y^2 + 8y^2) + (25y + 6y) + (-10)$

$28y^2 + 31y - 10$

Equations with Polynomials on Both Sides

$b(12 + b) - 7 = 2b + b(-4 + b)$

$12b + b^2 - 7 = 2b - 4b + b^2$

$12b + b^2 - 7 = -2b + b^2$

$-12b \quad -b^2 \quad -12b \quad -b^2$

$\frac{-7}{-14} = \frac{-14b}{-14}$

$\frac{1}{2} = b$

1. Distribute
2. Put all variable terms on one side; constants on the other
3. Combine terms
4. Solve if you can.

$x(x + 2) + 2x(x - 3) + 7 = 3x(x - 5) - 12$

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

$3x^2 - 4x + 7 = 3x^2 - 15x - 12$

$-3x^2 + 15x - 7 \quad -3x^2 + 15x - 7$

$11x = -19$

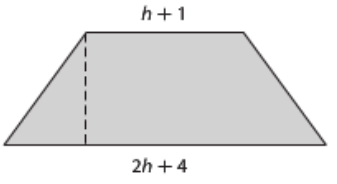
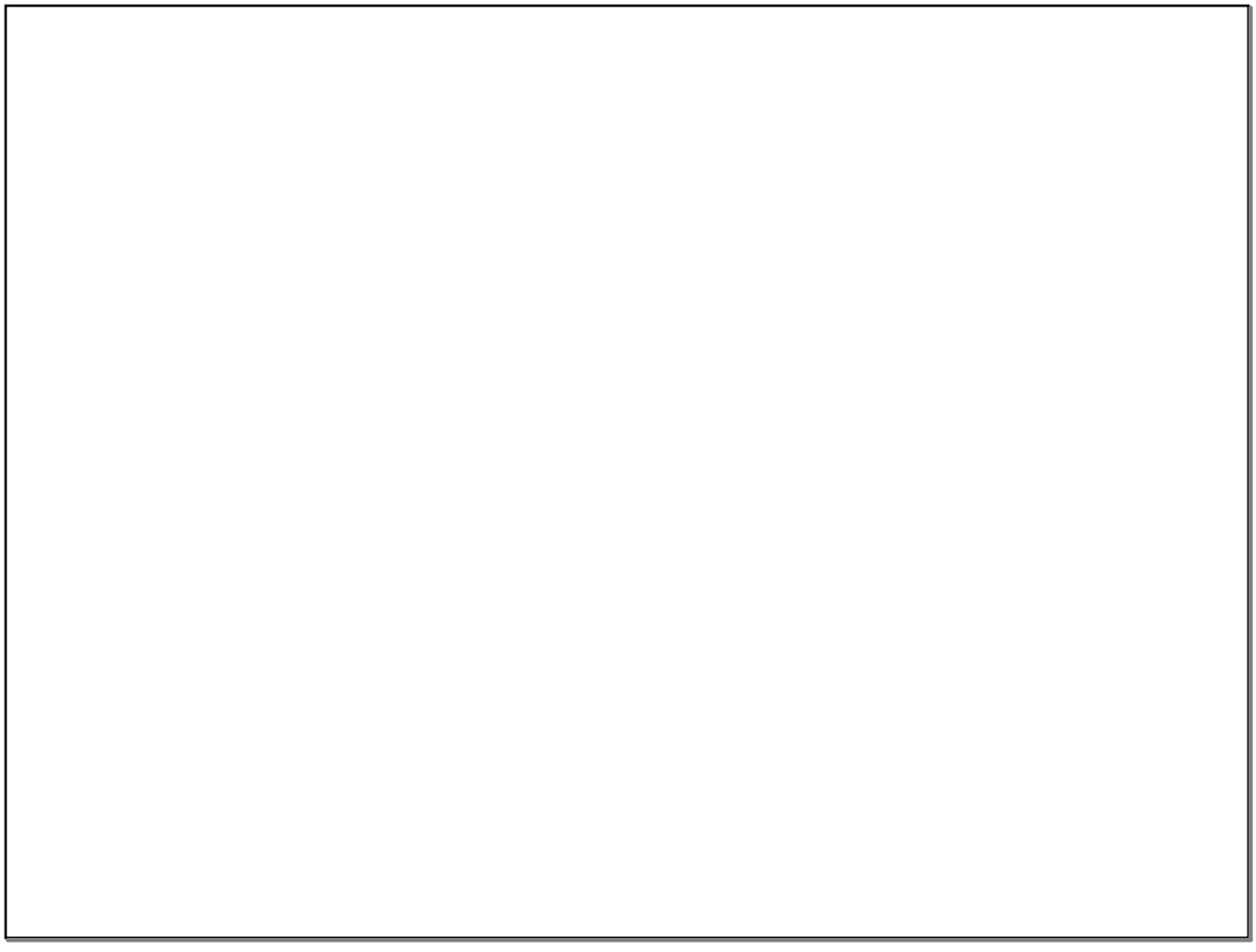
$\frac{11x}{11} = \frac{-19}{11}$

$x = -\frac{19}{11}$

AMUSEMENT PARK Admission to the Super Fun Amusement Park is $10. Once in the park, super rides are an additional $3 each and regular rides are an additional $2. Wyome goes to the park and rides 15 rides, of which s of those 15 are super rides. Find the cost if Wyome rode 9 super rides.

Standardized Test Example 3 Write and Evaluate a Polynomial Expression

GRIDDED RESPONSE The theme for a school dance is "Solid Gold." For one decoration, Kana is covering a trapezoid-shaped piece of poster board with metallic gold paper to look like a bar of gold. If the height of the poster board is 18 inches, how much metallic paper will Kana need in square inches?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