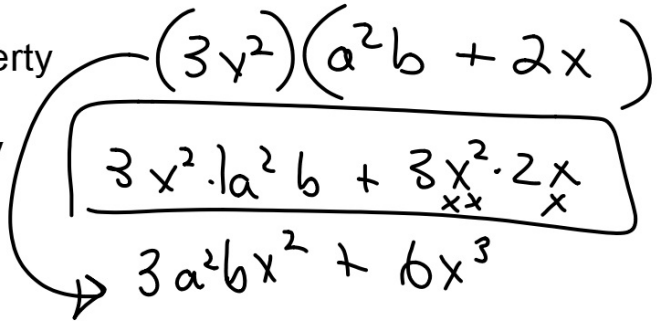
Algebra 1 8.2

Multiply a polynomial by a monomial

Solve equations involving the product of a monomial and a polynomial

monomial
polynomial
distributive property
like terms
Matching activity
Whiteboards



Simplify each expression.

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

D.P. DP

$3 \cdot 5x^2 + 3 \cdot 2x + 3 \cdot -4 + -1x \cdot 7x^2 + -1x \cdot 2x + -1x \cdot -3$

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

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

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

1. Distributive prop.
2. Multiply terms
3. Combine like terms (if any)
4. Answer in SF

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

Whiteboards

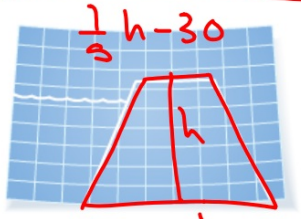
30. DAMS A new dam being built has the shape of a trapezoid. The length of the base at the bottom of the dam is 2 times the height. The length of the base at the top of the dam is $\frac{1}{5}$ times the height minus 30 feet.

diff

a. Write an expression to find the area of the trapezoidal cross section of the dam.

b. If the height of the dam is 180 feet, find the area of this cross section.

$\frac{1}{5}(h-30)$



$A = \frac{1}{2}h(b_1+b_2)$

$A = \frac{1}{2}h(2h+\frac{1}{5}h-6)$

$= \frac{1}{2}h(2\frac{1}{5}h-6)$

$= \frac{1}{2}h\cdot 2\frac{1}{5}h + \frac{1}{2}h\cdot -6$

$= 1\frac{1}{10}h^2 + -3h$

$1\frac{1}{10}(180)^2 + -3(180)$

$25640 + -540$

$35{,}100\ ft^2$

What is the difference?

3(2x + 4)

Simplify

$3 \cdot 2x + 3 \cdot 4$

$6x + 12$

$3(-4+4) = 0$

$3 \cdot 0 = 0$

$3(2x + 4) = 0$

Solve

$3 \cdot 2x + 3 \cdot 4 = 0$

$6x + 12 = 0$

$-12 \quad -12$

$\frac{6x}{6} = \frac{-12}{6}$

$x = -2$

Solve

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

$8(11) - 8(4) = 9 \cdot 8 - 16$

$88 - 32 = 72 - 16$

$56 = 56$

$d \cdot d + d \cdot 3 \quad -d \cdot d \cdot -d \cdot -4$

$d^2 + 3d + -d^2 + 4d = 9d - 16$

$7d = 9d - 16$

$-9d \quad -9d$

$-2d = -16$

$\frac{-2d}{-2} = \frac{-16}{-2}$

$d = 8$

don't be scared...

What number will make this equation be TRUE?

Solve

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

$-6 \cdot 11 + -6 \cdot -2c = 7 \cdot -2 + 7 \cdot -2c$

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

$+66 \quad +14c \qquad +66 \quad +14c$

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

$c = 2$

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

45. ERROR ANALYSIS Pearl and Ted both worked on this problem. Is either of them correct? Explain your reasoning.

Pearl

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

$6x^4 + 8x^2 + 4x^2$

$6x^4 + 12x^2$

Ted

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

$6x^4 + 8x^3 + 4x^2$

$2x^2 \cdot 3x^2 + 2x^2 \cdot 4x + 2x^2$