

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

$$3x^2 + 5x - 6 - \underline{7x^5}$$

$$-7x^{\textcircled{5}} + 3x^2 + 5x - 6$$

$$\begin{array}{l} \uparrow \\ \text{LC} = -7 \\ d = 5 \end{array}$$

Simplify each expression.

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

~~$-1x \cdot 7x^2 - 1x \cdot 2x - 1x \cdot -3$~~

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

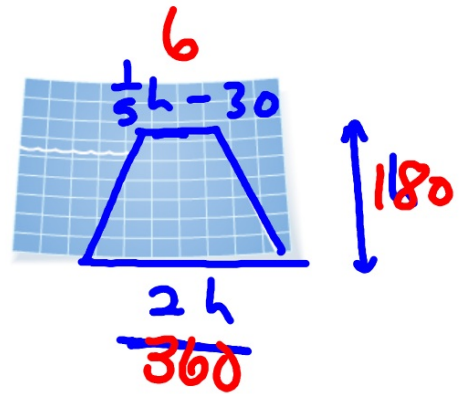
$-7x^3 + 13x^2 + 9x - 12$

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

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

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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.



- 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.

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

$$A = \frac{1}{2}h(2h + \frac{1}{5}h - 30)$$

$$= \frac{1}{2}h(2\frac{1}{5}h + 30)$$

$$= \frac{1}{2}h \cdot 2\frac{1}{5}h + \frac{1}{2}h \cdot 30$$

$$* = \frac{1}{10}h^2 + 15h$$

$$= \frac{1}{10} \cdot 180^2 + 15 \cdot 180$$

$$35640 - 2700$$

$$\frac{1}{2} \cdot 180(360 + 6)$$

$$32,940$$

What is the difference?

$$3(2x + 4)$$

Simplify

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

$$6x + 12$$

$$3(2x + 4) = 0$$

Solve

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

$$6x + 12 = 0$$

$$\begin{array}{r} -12 \quad -12 \\ \hline \end{array}$$

$$\frac{6x}{6} = \frac{-12}{6} \quad \underline{x = -2}$$

Solve

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

$$43. d(d+3) - d(d-4) = 9d - 16$$

$$88 - 32 = 72 - 16$$

$$56 = 56$$

$$\underline{d^2 + 3d} - \underline{d^2 + 4d} = 9d - 16$$

$$\begin{array}{r} 7d = 9d - 16 \\ -9d \quad -9d \\ \hline \end{array}$$

$$\begin{array}{r} -2d = -16 \\ \underline{-2} \quad \underline{-2} \\ d = 8 \end{array}$$

don't be scared...

Solve

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

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

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

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

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

$$c = 2$$

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

$$2t^2 + 3t + 20 = 2t^2 - 6t$$

$$\begin{array}{r} -2t^2 \qquad \qquad -2t^2 \\ \hline \end{array}$$

$$3t + 20 = -6t$$

$$\begin{array}{r} -3t \qquad \qquad -3t \\ \hline \end{array}$$

$$t = \frac{20}{9}$$

$$\frac{20}{-9} = \frac{-9t}{-9}$$



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*

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

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

