

Name _____ Date _____

Algebra
Unit 1 Line Master 8a

Multiplying and Dividing Polynomials

Part A: Multiplying Polynomials

1. How do you know that $(x) \times (x) \neq 2x$? Use a model to support your answer.

2. Use algebra tiles to model each multiplication.

a) $2x(3x + 1)$

b) $-3x(4x - 1)$

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Multiplying and Dividing Polynomials (cont'd)

3. Multiply. Use the distributive property.

a) $2(2x^2 - 3x + 1)$

b) $4(5y^2 - 3y + 8)$

c) $-6x(-2x - 9)$

Multiplying and Dividing Polynomials (cont'd)**Part B: Dividing Polynomials**

Recall that $(8x^2 - 10) \div 2$ can be written as

$$\frac{8x^2}{2} - \frac{10}{2} = 4x^2 - 5$$

Similarly,

$(-6x^2 + 12x) \div 3x$ can be written as

$$\frac{-6x^2}{3x} + \frac{12x}{3x} = -2x + 4$$

1. How does your knowledge of dividing fractions and exponent laws help you simplify a division expression?

2. Use a symbolic strategy to divide.

a) $(8x^2 + 2x) \div (2x)$

b) $(-6x^2 - 3x) \div (-3x)$

c) $(-6x^2 - 8x) \div (2x)$

Multiplying and Dividing Polynomials (cont'd)

3. a) Simplify this expression.

$$\left(\frac{9s}{-3}\right)(-4s)$$

b) How did your knowledge of the order of operations help you simplify the expression?

4. Simplify each expression without using algebra tiles.

a) $(14x^2 - 7x) \div 7x$

b) $(-8x^2 + 6x - 4) \div 2$

c) $\left(\frac{4m^2}{-2m}\right)(-3m)$