

M9 - 5.1 - Algebraic Expressions HW

State the Coefficient and the Degree of the term.

$-2x^2$

$-3x^2y$

$5x$

2

$-3xy^2z$

$\sqrt{5}x$

$2^{-4}xy$

$1xy$

Coefficient:

Degree:

State the degree of the Polynomial, the Leading Term and the Leading Coefficient.

$5x - 3x^2$

$x^3 + 4x^2$

$xy - 2xy^2 + 4$

Degree:

Leading Term:

Leading Coefficient:

Circle the following polynomials and state the type or state why not.

$2x + 5$

$2x^{-2}$

$x^2 - 2x + 1$

$\sqrt{3x} + 9$

$5x^2y + \frac{3}{x}$

6

$\sqrt{5}x + 3$

e^{x^2}

$6x + 2$

$x^3 + 3x^2 - 2x + 1$

$y = \log x + 2$

0

M9 - 5.2 - Combining Like Terms HW

Combine the like terms

$$x + x = 2x$$

$$x + 2x =$$

$$a + 4a =$$

$$3x - 2x =$$

$$2a - 2a =$$

$$x + 2 =$$

$$-5m - 2m =$$

$$2xy - xy =$$

$$x + 1 =$$

$$n + 3n =$$

$$6a - 7a =$$

$$ab + ba =$$

$$x^2 + x^2 =$$

$$2x^2 - x^2 =$$

$$2y^2 + 3y^2 =$$

$$x^2 - x =$$

$$x^2 + 2x^2 =$$

$$-5w^2 - 2w^2 =$$

Circle, square, or cloud, then combine like terms in ascending degree order.

$$2 + x + 3 =$$

$$x + 5$$

$$3 + x + 6 =$$

$$2 - x - 3 =$$

$$3n + n - 2n =$$

$$4 - 2 - x^2 =$$

$$n - 4 + 2 =$$

$$4x^2 + 3x + 2x =$$

$$2x + 1 - 3x =$$

$$x^2 + x + 2$$

$$3x + x^2 + 2x + 2x^2 =$$

$$3x^2 + 5x$$

$$y + 2y + 3 + 5 + y =$$

$$5x - 2 + x - 3 =$$

$$-3x^2 - 4x + x^2 - 2x + 4 =$$

$$3x - 3 - x + 5 =$$

$$3x^2 + 2x + 2 + 3x + 5 + x^2 =$$

M9 - 5.3 - Multiplying Monomials HW

Multiply the following polynomials.

$$6 \times 2a = 12a$$

$$5m \times 2m =$$

$$2x \times 3x^2 =$$

$$-4 \times 3m =$$

$$-5n \times -2n =$$

$$-5x^3 \times 2x^2 =$$

$$3x^2 \times 6 =$$

$$a \times a \times a =$$

$$x^3 \times 3x^2 =$$

$$a \times a =$$

$$2a \times a =$$

$$(-5x)(3x) =$$

Multiply the following polynomials.

$$3(2a) =$$

$$x^2(-x) =$$

$$2ab^3(ab^2) =$$

$$-2a(-3) =$$

$$2x(5x) =$$

$$3ab^2(2b) =$$

$$-5x(-2x) =$$

$$-3a^2(2a) =$$

$$-2a^2b(-b^2) =$$

$$3xy \times 9xz =$$

$$5x^2y^3 \times 9xy^3 =$$

$$-2x^4y^2 - 3x^{-1}y^3 =$$

$$5x^2 \times yz =$$

$$5^2 \times yz =$$

$$5^2 \times 3^2xyz =$$

M9 - 5.3 - Dividing Monomials HW

Divide the following polynomials.

$$6a \div 2 = 3a$$

$$8m \div 2m =$$

$$9x^2 \div 3 =$$

$$12x \div -4x =$$

$$-6m \div 3 =$$

$$-10n \div -2n =$$

$$(-15x) \div (3x) =$$

$$-8m^2 \div (-2m) =$$

$$18x^3 \div 3x^2 =$$

$$-4x^3 \div 2x^2 =$$

$$x \div x =$$

$$\frac{6a}{2} =$$

$$\frac{5}{5} =$$

$$\frac{1}{1} =$$

$$\frac{6x}{2x} =$$

$$\frac{4a^2}{a} =$$

$$\frac{6a^2}{2a} =$$

$$\frac{a}{a} =$$

$$\frac{x^4}{2x^2} =$$

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

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

$$\frac{2a}{3a^2} =$$

$$\frac{15st^2}{t} =$$

$$\frac{4st}{-6st} =$$

$$\frac{-2st^2}{4s^2t^2} =$$

$$\frac{10b^2c}{5c^2} =$$

$$\frac{3x^2}{15y} =$$

$$\frac{24x^2y^3}{16x^3y} =$$

$$\frac{ab^2}{-3ac} =$$

$$\frac{-2x^2}{-x} =$$

$$\frac{-2x}{x^2} =$$

M9 - 5.3 - Dividing Polynomials W=HW

Separate into an addition/subtraction of fractions and simplify.

$$\frac{4x + 2}{2} = \frac{4x}{2} + \frac{2}{2} = 2x + 1$$

$$\frac{6x - 3}{3} =$$

$$\frac{-5x + 10}{2} =$$

$$\frac{4x + 2}{-2} =$$

$$\frac{6x - 3}{-3} =$$

$$\frac{-5x + 10}{-2} =$$

$$\frac{-6x - 6}{3} =$$

$$\frac{5x - 10y}{5} =$$

$$\frac{6x + 8y}{-2} =$$

$$\frac{4x^2 - 8x - 16}{4} =$$

$$\frac{6x^2 - 12x + 18}{-6} =$$

$$\frac{-5x^2 - 10x + 20}{-5} =$$

$$\frac{5x^2 - 10xy + 20}{-5x} =$$

$$\frac{5x^2 + x}{x} =$$

$$\frac{3x^2 - x}{x} =$$

$$\frac{-5x^2 - 3y}{x} =$$

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

$$\frac{8x^2 + 4x}{2x} =$$

$$\frac{-9x - 3y}{3x} =$$

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

$$\frac{10x^2 - 7x}{5x} =$$

$$\frac{9x^3 + 6x^2 - 3x}{3x} =$$

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

$$\frac{5x - 7}{-2x} =$$

$$\frac{30x^2 - 20xy + 15y^2}{x} =$$

$$\frac{2x^2 - 6xy + 4y^2}{2y^2} =$$

$$\frac{3xy - 4x + 5x^2}{-x} =$$

$$\frac{5ab - 10b^2 + 3a}{ab} =$$

M9 - 5.4 - Distribution HW

Distribute the following by multiplying the number in front/behind of the brackets by both numbers inside the brackets.

$$2(x + 5) =$$

$$5(3 - x) =$$

$$-3(x + 7) =$$

$$4(x + 5)$$

$$-9(x + 3) =$$

$$(x - 2)7 =$$

$$6(3x + 4) =$$

$$-4(7x + 4) =$$

$$-2(9x + 11) =$$

$$-8(3x - 7) =$$

$$(6x - 9)3 =$$

$$5(3x - 8) =$$

$$x(3x + 7) =$$

$$4x(x - 2) =$$

$$(7x - 3)x =$$

$$3x^2(3x - 5) =$$

$$-7x(3 + 8x) =$$

$$5x(6x - 3x) =$$

$$-2(4x^2 + 8x - 2)$$

$$6(2x^2 - 4x + 1) =$$

$$9(2x^2 + 3x + 4) =$$

$$7x(2x^2 + 5x + 7) =$$

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

M9 - 5.4 - FOIL HW

$$(x + 3)(x + 2)$$

$$(n + 5)(n + 9)$$

$$(x + 6)(x + 3)$$

$$(x + 2)(x + 12)$$

$$(x + 11)(x + 9)$$

$$(p + 5)(p + 7)$$

$$(m - 3)(m - 8)$$

$$(x - 14)(x - 2)$$

$$(x - 12)(x - 3)$$

$$(x - 6)(x + 6)$$

$$(n - 3)(n + 3)$$

$$(x + 4)(x - 4)$$

$$(x + 5)(x - 5)$$

$$(p - 12)(p + 6)$$

$$(x + 9)(x - 7)$$

$$(y - m)(y + 2)$$

$$(x - 9)(x + z)$$

$$(x + y)(x - y)$$

$$(6x + 3)(x + 3)$$

$$(5q - 4)(q - 7)$$

$$(6x + 7)(x - 6)$$

$$(3a - 4)(a + 2)$$

$$(6x + y)(x - 2y)$$

$$(9c - d)(d + 7)$$

M9 - 5.4 - Dist/Foil/Combine HW

$$2(x + 4)$$

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

$$-2x(x + 1)$$

Distribution

$$(x + 2)(x - 4)$$

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

$$(x + 4)(x - 4)$$

$$(x - 2)^2$$

(Foil)
Distribute
Combine

$$(x - 2)(x^2 - 4x + 1)$$

$$(2x + 1)(x - 3)(x + 4)$$

$$(x - 2)^3$$

Foil
Triple Foil
Combine

$$(x + 2) + (x - 5)$$

$$(2x + 2) - (x - 5)$$

Distribute
Combine

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

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

Foil
Distribute
Combine

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

$$(x + 8) - (x + 2)(x - 1)$$

Foil
Distribute
Combine

M9 - 5.4 - Dist/Foil/Combine HW

$$2x^2(x - 2)$$

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

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

$$(1 - x)(2 + x)$$

$$(3 - x)(x - 4)$$

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

$$-2x(x + 5)(x - 2)$$

$$(x + 2)(x + 2)$$

$$3(x - 2)^2$$

$$6 + (x - 3)$$

$$5 - (x + 4)$$

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

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

$$(x - 2)(x + 3) - (x - 2)(x + 3)$$

$$3x(x + 1)(x - 3) - 2(x + 4)(x - 3)$$