



Multiply:

1.  $x \cdot x = x^2$

2.  $x^2 \cdot x^3$

$x \cdot x \cdot x \cdot x \cdot x$   
 $x^5$

3.  $m \cdot m^4$

$m \cdot m \cdot m \cdot m \cdot m$   
 $m^5$

Without writing it out:  $m^{10} \cdot m^6 = m^{16}$

**Exponent Rule:**  $x^m \cdot x^n = x^{m+n}$

**Like Terms:** A "term" is a monomial. Like terms must have the same variables with the same corresponding degree. Circle the like terms from each group of terms.

a.  $3x, 4y, 3y$

b.  $3x^2, 4y, 3y^2$   
none!

c.  $3x, 2yx, 3xy$

d.  $3x^2, 4y^2, 3y^2, 4x$

e.  $x, 10x, -3x$

f.  $2xy^2, 3x^2y, -2y^2x$

**Simplify:** Combine Like Terms. Write your answer in decreasing order (standard form).

1.)  $(3s^2 + 7s - 6) + (s^3 + s^2 - s - 1)$

$s^3 + 4s^2 + 6s - 7$

2.)  $(3x^2 - 2x + 10) - (2x^2 + 4x - 6)$

$x^2 - 6x + 16$

You try these!

4.)  $(1 - 4x - x^4) - (-x - 3x^4)$

$2x^4 - 4x + 1$

4.)  $(6x^5 + 2x^2 - 3x^3) + (3x^5 + 3x^2 + 3x^3 + 9)$

$9x^5 + 5x^2 + 9$

6.)  $(7x^5 - 2x^2 - 3x^3) - (2x^4 - x^5 - 3x^2 - 4x^3)$

$8x^5 - 2x^4 + x^3 + x^2 - 5$

**Be the teacher:** Your mom is an Algebra teacher, and you are helping her grade papers. Correct this student's work: Classify the following polynomials. Name each polynomial and identify the degree and leading coefficient.

1)  $7s - 3s^2 - 6$

~~Monomial~~ trinomial  
Degree: 2  
Leading Coefficient: ~~7~~ -3

2)  $5x^4 - 3x^6$

~~Trinomial~~ binomial  
Degree: ~~-3~~ 6  
Leading Coefficient: ~~5~~ -3