Relevant Vocabulary

COEFFICIENT OF A MONOMIAL: The *coefficient of a monomial* is the value of the numerical expression found by substituting the number 1 into all the variable symbols in the monomial. The coefficient of $3x^2$ is 3, and the coefficient of the monomial $(3xyz) \cdot 4$ is 12.

TERMS OF A POLYNOMIAL: When a polynomial is expressed as a monomial or a sum of monomials, each monomial in the sum is called a *term* of the polynomial.

LIKE TERMS OF A POLYNOMIAL: Two terms of a polynomial that have the same variable symbols each raised to the same power are called *like terms*.

Homework

1. Complete the following statements by filling in the blanks.
   a. $(a+b)(c+d+e) = ac + ad + ae + \_\_\_ + \_\_\_ + \_\_\_$
   b. $(w-1)(1+w+w^2) = \_\_\_\_ - 1$
   c. $(2x+5y)(2x-5y) = \_\_\_\_ - \_\_\_\_$
   d. $(2^{21}-1)(2^{21}+1) = \_\_\_\_ - 1$

2. Use the tabular method to multiply and combine like terms.
   a. $(x^2-4x+4)(x+3)$
   b. $(11-15x-7x^2)(25-16x^2)$
   c. $(3m^3+m^2-2m-5)(m^2-5m-6)$
   d. $(x^2-3x+9)(x^2+3x+9)$

3. Multiply and combine like terms to simplify. Choose at least 1 from each box (for a total of 5). Answer on a separate paper.

a. $2a(5+4a)$	b. $x^3(x+6)+9$
c. $\frac{1}{8}(96z+24z^2)$	d. $2^{23}(2^{84}-2^{81})$
e. $(x-4)(x+5)$	f. $(10w-1)(10w+1)$
g. $(3z^2-8)(3z^2+8)$	h. $(-5w-3)w^2$
i. $8y^{1000}(y^{12200}+0.125y)$	j. $(2r+1)(2r^2+1)$
k. $(t-1)(t+1)(t^2+1)$	l. $(w-1)(w^5+w^4+w^3+w^2+w+1)$
m. $(x+2)(x+2)(x+2)$	n. $n(n+1)(n+2)$
o. $n(n+1)(n+2)(n+3)$	p. $n(n+1)(n+2)(n+3)(n+4)$
q. $(x+1)(x^3-x^2+x-1)$	r. $(x+1)(x^5-x^4+x^3-x^2+x-1)$
s. $(x+1)(x^7-x^6+x^5-x^4+x^3-x^2+x-1)$	t. $(m^3-2m+1)(m^2-m+2)$