MAT 1275CO - Chapter 1.2.3 - 1.2.4 Problem Set

1. Simplify. Your final answer should not include negative exponents.
   (a) $(-2x^7y^3z)^3$
                                                            (b) $(3a^{(-2)}b)^4$

2. Multiply using appropriate rules and properties. Name the special property that can be used if one is applicable. Simplify your final expression by combining like terms. State the degree and type of polynomial (monomial, binomial, trinomial, polynomial) of each of the final expressions.

   (a) $(6x^3y)(4xy^6)$

   (b) $(7xy - 4)(2x - 3y)$

   (c) $-4xy^2(3x^2y - 5xy + 3)$

   (d) $(5b + c)(5b - c)$

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

   (f) $2(3x^4 + 2)(5x + 6)$

   (g) $(3x^2 - 4x + 2)(5x^2 + 10x - 1)$

   (h) $(8xy + 4x)(8xy + 4x)$

   (i) $(2a - 10b)(2a + 10b)$

   (j) $(3a^2)^3(a^4 - 5a^3 + 2a^2 - 12a + 4)$

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

   (l) $(a - 2b)(4a^2 + 3ab - 4b^2)$

   (m) $(6a - 4)^2$

   (n) $(6x^2)^4(2x^4x^{-3}x)$

3. (a) Find the coefficient of x^3y^2 in $(2x + 3y)^6$.
   (b) Find the coefficient of ab^2 in $(3a - 4b)^3$.

Critical Thinking

1. Why can't we use FOIL to multiply two trinomials?