Math 127
Worksheet 2: Polynomials and Factoring                    **Name:**_____
5/29/2008

1. Simplify each of the following by multiplying out and/or combining terms:

    (a) $4x + 3(2x - 4) + 12$

    (d) $(5z + 8y)(5z - 8y)$

    (g) $(5t - \frac{1}{5})(10t + \frac{3}{5})$

    (b) $(-3x^2 + 7) - (3x^2 + 2x - 5)$

    (e) $(3x - 4y)^2$

    (h) $(x + 3y)(x^2 - 3xy + 9y^2)$

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

    (f) $\dfrac{4a^4b^3 - 4a^3b^4 + 6a^2b}{2ab^2}$

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

2. Factor each of the following completely:

    (a) $14x^6 - 6x^2y^4 + 4x^3y^5$

    (d) $2x^2 + 11x + 15$

    (g) $8x^3 + 27y^3$

    (b) $x^2 - xy - 5x + 5y$

    (e) $2y^2 - 7y - 15$

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

    (c) $x^2 - 4x - 21$

    (f) $40x^3 + 200x^2 + 250x$

    (i) $16 - x^4$