Name: _____ Date: _____ #76 Factoring Binomials

1. Factor each of the following

   a. $6y - 15$

   $3(2y-5)$

   b. $5a - 30$

   $5(a-6)$

   c. $6a - 2b$

   $2(3a-b)$

   a. $-8w + 20z$

   $4(-2w + 5z)$

   e. $-2x + 6y$

   $2(-x+3y)$

   f. $4k - 9k$

   $k(4-9)$
   $k(-5)$
   $-5k$

   g. $10a - 13a$

   $a(10-13)$
   $a(-3)$
   $-3a$

   h. $3x^2 + 12x$

   $3x(x+4)$

   i. $5x^4 + 25x^2$

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

2. Turn each standard form quadratic into its intercept form

   a. $f(x) = 2x^2 - 10x$

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

   b. $g(x) = -8x^2 + 16x$

   $g(x) = 8x(-x+2)$

   c. $h(x) = \frac{1}{5}x^2 - 3x$

   $h(x) = x(\frac{1}{5}x - 3)$

   d. $j(x) = -4x^2 - 24$

   $j(x) = -4x(x+6)$

3. Solve each quadratic by factoring.

   a. $f(x) = -3x^2 - 15x$

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

   $\frac{-3x}{-3} = \frac{0}{-3}$ $\frac{x+5=0}{x-5 \quad -5}$
   $x = 0$ $x = -5$

   $\boxed{x = 0 \text{ and } -5}$

   b. $g(x) = 6x^2 + 10x$

   $g(x) = 2x(3x+5)$

   $\frac{2x}{2} = \frac{0}{2}$ $\frac{3x+5=0}{-5 \quad -5}$
   $x = 0$ $\frac{3x}{3} = \frac{-5}{3}$
   $x = \frac{-5}{3}$

   $\boxed{x = 0 \text{ and } -\frac{5}{3}}$