Name: _____ **Algebra II**
Date: **Homework 26**

Problem 1. Write the following in the form $ax^2 + bx + c$ (i.e. foil these out).

(a) $(x+1)^2$

(b) $(x-1)^2$

(c) $(x+2)^2$

(d) $(x-2)^2$

(e) $\left(x+\frac{1}{2}\right)^2$

(f) $\left(x-\frac{1}{2}\right)^2$

(g) $\left(x+\frac{3}{4}\right)^2$

(h) $\left(x-\frac{3}{4}\right)^2$

(i) $\left(x+\frac{2}{5}\right)^2$

(j) $\left(x-\frac{2}{5}\right)^2$

(k) $(x+a)^2$

(l) $(x-a)^2$

Problem 2. Notice that each of the above followed a consistent pattern. For instance $(x-3)^2 = x^2 - 6x + 9$, so the first term is always x^2, the last term is always the second part of the given number squared $(-3)^2 = 9$ (and that it's always positive), and that the second term is always 2 times that given number, $2(-3) = -6$. Also notice that the second term is always and only negative if the given number is negative. Next to your answers above, verify this pattern by writing it in the form $x^2 + 2(*)x + (*)^2$ next to your originals. Here are a couple of examples of how your answers should look:

(A) $(x-3)^2 = x^2 - 6x + 9 = x^2 + 2(-3)x + (-3)^2$

(B) $(x+\alpha)^2 = x^2 + 2\alpha + \alpha^2 = x^2 + 2(\alpha)x + (\alpha)^2$