Name KEY Date _____ Period _____

Algebra Investigation 8A Quiz RETAKE

Lessons 7.12 and 8.01-8.04 (NO CALCULATOR)

1. Solve the equation by completing the square.

$x^2 + 6x - 59 = 0$

$x^2+6x+9-68=0$

$(x+3)^2-68=0$

$((x+3)+\sqrt{68})((x+3)-\sqrt{68})=0$

$x+3+\sqrt{68}=0$ $\quad x+3-\sqrt{68}=0$

$x=-3\pm\sqrt{68}$

$x=-3\pm\sqrt{4}\cdot\sqrt{17}$

$x=-3\pm2\sqrt{17}$

2. Solve the equation by using the quadratic formula.

$16x^2 - 40x + 25 = 0$

$a=16,\ b=-40,\ c=25$

$$x=\frac{40\pm\sqrt{(40)^2-4(16)(25)}}{2(16)}$$

$$x=\frac{40\pm\sqrt{1600-1600}}{32}$$

$$x=\frac{40\pm\sqrt{0}}{32}$$

$$x=\frac{40\pm0}{32}$$

$$x=\frac{40}{32}$$

$$x=\frac{5}{4}$$

3. Find all values of k such that $5x^2 + 10x + k = 0$ that has no solutions.

$a=5,\ b=10,\ c=k$

$b^2-4ac<0$

$10^2-4(5)k<0$

$100-20k<0$

$+20k \quad +20k$

$\frac{100}{20}<\frac{20k}{20}$

$5<k$

$k>5$

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4. Solve each equation using any method.

a. $2x^2 - 7x = -9$

$a=2$, $b=-7$, $c=9$

$2x^2-7x+9=0$

$x = \frac{7 \pm \sqrt{(-7)^2-4(2)(9)}}{2(2)}$

$x = \frac{7 \pm \sqrt{49-72}}{4}$ No solution

$x = \frac{7 \pm \sqrt{-23}}{4}$

b. $2x^2 - 7x - 2 = 0$

$a=2$, $b=-7$, $c=-2$

$x = \frac{7 \pm \sqrt{(-7)^2-4(2)(-2)}}{2(2)}$

$x = \frac{7 \pm \sqrt{49+16}}{4}$

$x = \frac{7 \pm \sqrt{65}}{4}$

c. $2x^2 - 7x = 15$

$2x^2-7x-15=0$

$(2x+3)(x-5)=0$

$2x+3=0$ $\quad x-5=0$

$x = \frac{-3}{2}, x=5$

5. Factor each polynomial.

a. $25x^2 - 22x - 3$

$(25x+3)(x-1)$

b. ~~$14x^2 - 10x - 24$~~

$12x^2+11x-15$

$(4x-3)(3x+5)$