**Name: Period: Job 38: Solving Linear – Quad Systems**

**Part 1: Lesson 9-7 Textbook**

Page 400: 9, 11, 24, 25, 28

**Part 2: Algebra Regents Questions –**

1. The zeros of the function $f\left(x\right)=3x^{2}-3x-6$ are
2. $-1$ and $2$ (3) $1$ and $2$
3. $1$ and $-2$ (4) $-1$ and $2$
4. Each day Toni records the height of a plant for her science lab. Her data are shown in the table below.



The plant continues to grow at a constant daily rate. Write an equation to represent $h(n)$, the height of the plant on the $n$th day.

1. The table below shows the year and the number of households in a building that had high-speed broadband internet access.



For which interval of time was the average rate of change the *smallest*?

1. $2002-2004$ (3) $2004-2006$
2. $2003-2005$ (4) $2005-2007$

1. Which polynomial function has zeros at $-3, 0, $and $4$?
2. $f\left(x\right)=(x+3)(x^{2}+4)$ (3) $f\left(x\right)=x(x+3)(x-4)$
3. $f\left(x\right)=(x^{2}-3)(x-4)$ (4) $f\left(x\right)=x(x-3)(x+4)$
4. The number of carbon atoms in a fossil is given by the function $y=5100(0.95)^{x}$, where $x$ represents the number of years since being discovered.

What is the percent of change each year? Explain how you arrived at your answer.

1. Which trinomial is equivalent to $3(x-2)^{2}-2(x-1)$?
2. $3x^{2}-2x-10$ (3) $3x^{2}-14x+10$
3. $3x^{2}-2x-14$ (4) $3x^{2}-14x+14$
4. Jackson is starting an exercise program. The first day he will spend 30 minutes on a treadmill. He will increase his time on the treadmill by 2 minutes each day. Write an equation for $T(d)$, the time, in minutes, on the treadmill on day $d$.
5. If Lylah completes the square for $f\left(x\right)=x^{2}-12x+7$ in order to find the minimum, she must write $f(x)$ in the general form $f\left(x\right)=(x-a)^{2}+b$. What is the value of $a$ for $f(x)$?
6. $6$ (3) $12$
7. $12$ (4) $-12$

8. Subtract $5x^{2}+2x-11$ from $3x^{2}+8x-7$. Express the result as a trinomial.