**Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Hour \_\_\_\_\_Date\_\_\_\_\_\_**

**Algebra 1: 7th Grade Final Review**

**Date of Exam: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Materials Allowed During Exam: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Chapter 6:**

1. Solve x – 19 > -16
2. Solve 7h ≤ 6h – 1
3. Solve -14g ≥ 126
4. Solve $\frac{b}{-12}$ ≤ 3
5. Solve 15b -12 > 7b + 60
6. Solve: | r + 10| < 3

**Chapter 7:**

1. How many solutions exist for this system; 3x –y = 8, 3x = 4 – y.
2. How many solutions exist for this system; 9x + 2 = 3y, y – 3x = 8.
3. Use substitution to solve for the system of equations: y = x -1, 4x – y = 19.
4. Use elimination to solve for the system of equations: 2m – n = 4, m + n = 2
5. Solve this system: 2m + n = 1, m – n = 8.
6. If y = 2x and x + 2y = 8, what is the value ***of y***?
7. Solve the system x +2y = 14, 4x -3y = 12, ***for x.***

**Chapter 8:**

1. Simplify (y8 ) (y3)
2. Simplify (c5)6
3. Simplify a10 ÷ a6
4. Simplify (3x3)(52x3)
5. Find (7b3+c6)3
6. Express 4825 in scientific notation
7. Express 2.3 x104 in standard notation.
8. What is the degree of the polynomial 2xy3+x2y?
9. Simplify (2c + 5)(3c2 - 4c +2)

**Chapter 9:**

1. Find the prime factorization of 90.
2. Factor 12 a*2* b3 completely
3. Find the GCF of 18xy and 36y2.
4. Factor x + x2y2 + x3y3 completely.
5. Solve k(k - 24 ) =0
6. Factor y2 + 11y + 24
7. Factor 2x2 + 7x + 5
8. Solve 5x2 +27x + 10= 0
9. Factor n2 – 2

**Chapter 10:**

1. Find the vertex of this quadratic function y= -x2  + 5, state if it is a maximum or minimum.
2. Solve c2 -5c -24=0 by graphing and determine the type of root (two, double, or no).
3. Solve b2 – 4b + 4 = 16 by taking the square root of each side.
4. Find the value of c that makes each trinomial a perfect square:

c2 – 16c + c.

1. Solve s2 – 4s – 12 = 0 by completing the square.
2. Solve x2 + 3x -18=0 by using the quadratic formula.
3. State the value of the discriminate for m2+ 5m-6 = 0.
4. Determine the number of real roots of s2+ 8x + 16=0 *(discriminant).*
5. Find the next three terms in the geometric sequence: $\frac{3}{4}, \frac{1}{2, }, \frac{1}{3}, \frac{2}{9}, …$

**Formulas:**

**Chapter 9:**

**Difference of perfect squares:** a2 – b2 = (a – b)(a + b)

**Perfect Square Trinomials:**

a2 + 2(a)(b) + b2 = (a + b)2

a2 - 2(a)(b) + b2 = (a - b)2

**Steps to factor:**

1. Pull out common factors
2. Is this a binomial or a trinomial?
3. Binomial: is it possible that this the difference of two perfect squares?
	1. Yes: use difference of perfect squares
	2. No: done factoring
4. Trinomials: Is it possible based on the signs that is a perfect square trinomial?
	1. Yes: Use perfect square trinomials to check the criteria
	2. No: is the number in front of the first term (known as a in this situation) =1 or greater than 1?
		1. If = 1, find f.o. C that sum to B
		2. If >1, multiply A and C. Find factors, split the B term, and continue into the grouping to factor.

**Chapter 10:**

 Axis of Symmetry: $x= -\frac{b}{2a}$

 Quadratic Formula: 