Algebra 1: Unit 1B Practice Test/Study Guide
Solving Equations and Inequalities /45

Name: _____Period: _____

#1-4 [A1.A-CED.A.4] I can rearrange formulas to highlight a quantity of interest. (____ / 9 pts)

For problems 1-3, solve for the indicated variable.

1) $3x - 2y = 16$ *solve for* **y** (2pts)

2) $K = 6j + 2l$ *solve for* **l** (2 *pts*)

3) $F = \frac{9}{5}C + 32$ *solve for* **C** (2pts)

4) Four hundred tickets were sold for a school play. General admission tickets were $4.50, while student tickets were $2.25. The total revenue, *r*, for *g* general admission tickets and *t* student tickets can be described by the equation $r = 4.50g + 2.25t$. Solve the equation for the variable that will help the school determine the number of student tickets sold. *(3 pts)*

#5-12 [A1.A-REI.B.3] I can solve inequalities *(____ / 30 pts)*

For problems 5-8, solve the inequality. For full credit, show ALL work.

5) $-x - 6 < 7$ (3 pts)

6) $\frac{x}{-5} - 2 \geq -3$ (3 pts)

7) $-2(x-8) < 0$ (3 pts)

8) $7d - 13 \leq 5d + 3$ (3 pts)

9) $2a + 9 - (a - 2) > 7$ (4 pts)

10) $14 + 4w \geq 2(w + 12)$ (4 pts)

11) The inequalities solved below have a student error. Explain the error and then solve correctly.

a) (2 pts total: *1 pt explain, 1 pt correct answer)*

$$-3(2x-2)<14$$
$$-6x+6<14$$
$$-6x<8$$
$$x<-\frac{4}{3}$$

b) *(*2 pts total: *1 pt explain, 1 pt correct answer)*

$$-12>x-20$$
$$8>x$$
$$x>8$$

12) Suppose a classmate is having difficulty solving $3(x-1)>4x-2+8x$. Explain how to solve the inequality, showing all the necessary steps and identifying the properties you would use. *(6 pts – 1pt/per blank)*

a) $3(x-1)>-4x-2+12x$	a) Given
b) _____	b) Distributive Property
c) $3x-3>8x-2$	c) Combine like terms.
d) $-3>5x-2$	d) _____
e) _____	e) Addition Property of Inequality
f) _____	f) _____
g) $x<-\frac{1}{5}$	g) _____

#13-14 [A1.A-CED.A.1] I can create inequalities and use them to solve problems. *(____ / 8pts)*

13) You are shopping for a table and chairs with a maximum budget of $350. You've selected a table that costs $125 and the chairs are $48 each. How many chairs can you purchase and remain within your budget? *(4 pts)*

a. Write an *inequality* to represent this situation: _____
b. Solve your inequality *and* interpret your answer:

14) You're walking in a walk-a-thon and you need to raise at least $500. You have $75 in one-time donations and pledges of $21.50 per mile. How many miles will you need to walk to meet your goal? (round your answer to the nearest hundredths) (4 pts)

a. Write an *inequality* to represent this situation: _____
b. Solve your inequality and interpret your answer: