Algebra 1 Ch7 Final Exam Review Spring 2016

1. Friday I walked 30 minutes and jogged 10 minutes and burned 330 calories. On Saturday I walked 25 minutes and jogged 40 minutes and burned 750 calories. Write and solve a system of equations to find out how many calories are burned per minute for both walking and jogging.

Graph each linear inequality on the x-y plane.

2. $y \leq -\frac{1}{5}x + 4$ 3. $y > 3x$ 4. $6x - 8y \geq 24$ 5. $x > -3$ 6. $y \leq 4$

Graph each system of inequalities. Use a colored pencil or highligher to shade the solution region.

7. $y < -3x + 5$
$y \leq 4x$

8. $x \leq 2$
$3x + 4y > 12$

9. A plane makes a round-trip flight between two cities that are 945 miles apart. The plane takes 4.5 hours when flying into a headwind (against the wind) and takes 3.5 hours when flying into a tailwind (with the wind). Write and solve a system of equations to find the speed of the plane and the speed of the wind.

10. Solve this system of equations by graphing. $y = -\frac{1}{2}x + 4$ $3x - 6y = 12$

11. Witout solving tell if each system of equations has ONE, NONE, or MANY solutions.

a) $y = 4x - 5$
$y = -\frac{1}{4}x + 7$

b) $y = 2x + 8$
$6x - 3y = 12$

c) $y = \frac{2}{3}x - 4$
$6x - 9y = 36$

12. Solve each system of equation using Elimination or Substitution. Give your answer as an ordered pair.

a. $y = 4x - 9$
$y = 2x + 15$

b. $4x + 3y = -6$
$4x - 7y = -26$

c. $y = 3x - 4$
$6x + 5y = 1$

d. $10Q + 3R = 24$
$4Q + 13R = 104$

e. $11x - 7y = 106$
$-12x + 7y = -115$

f. $8x + 10y = 14$
$20x + 25y = 35$

g. $5a - 16b = 87$
$11a + 4b = -83$

h. $x + y = 23$
$4x + 5y = 102$

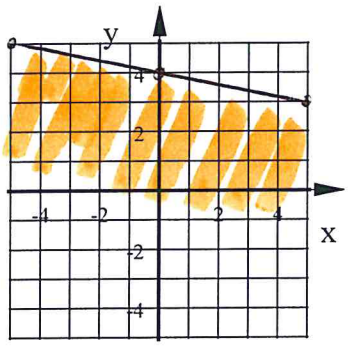
j. $y = 3x - 4$
$6x - 2y = 14$

13. You want to start a business that makes and sells board games. You will need to spend $280,000 to get the necessary equipment and a building to produce the games. Materials for each game will cost you $4.50 each. Labor costs to produce the game and sell it will be $3.00 per game. You plan to sell the games for $25 each. Write and solve a system of equations to find the number of games you would have to make and sell in order to breal-even.

Algebra 1 Ch7 Final Exam Review Spring 2016 ANSWERS

1. EQ: $30w + 10j = 330$ and $25w + 40j = 750$ $w = 6$ cal/min walking $j = 15$ cal/min jogging.

2.



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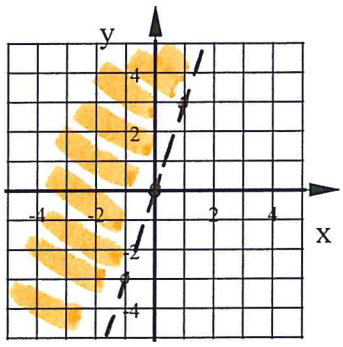

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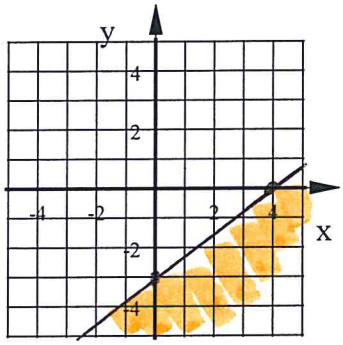

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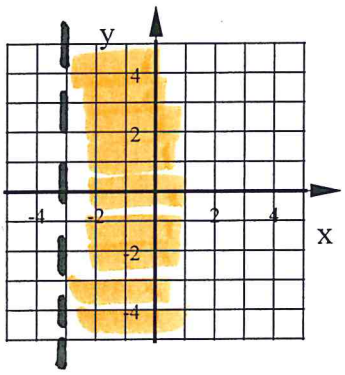

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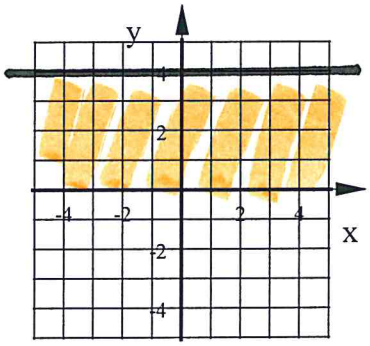

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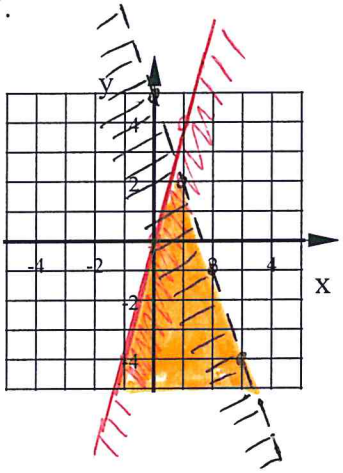

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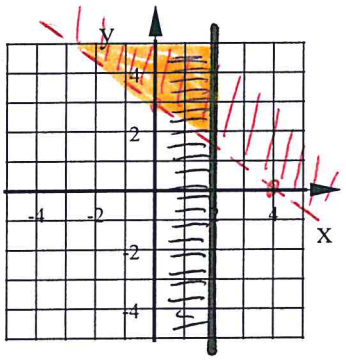

9. EQ: $945 = (P - W)4.5$ and $945 = (P + W)3.5$
P = speed of the plane = 240 mph W = speed of the wind = 30 mph

10. $(6,1)$

11. a) ONE b) NONE c) MANY

12. a) $(12,39)$ b) $(-3,2)$ c) $(1,-1)$ d) $(0,8)$ e) $(9,-1)$ f) Many Sol's
g) $(-5,-7)$ h) $(13,10)$ j) No Sol

13. $g = \#games$ EQ: Income: $I = \cancel{20g}\ 25g$ Expenses: $E = \cancel{450,000}\ 280,000 + 4.50g + 3g$

$g = 160{,}000$ games to break-even.