Name: _____ Date: _____

Regents Review Day 2: Linear Equations & Inequalities

1.

Last weekend, Emma sold lemonade at a yard sale. The function $P(c) = .50c - 9.96$ represented the profit, $P(c)$, Emma earned selling c cups of lemonade. Sales were strong, so she raised the price for this weekend by 25 cents per cup. Which function represents her profit for this weekend?

1) $P(c) = .25c - 9.96$
2) $P(c) = .50c - 9.71$
3) $P(c) = .50c - 10.21$
4) $P(c) = .75c - 9.96$

up 25¢

2.

How many of the equations listed below represent the line passing through the points (2,3) and (4,−7)?

$-5x + y = 13$
$+5x \quad +5x$
$y + 7 = -5(x - 4)$
$-7 \quad -7$
$y = -5x + 13$
$y - 7 = 5(x - 4)$
$+7 \quad +7$

① $y = 13 - 5x$
② $y = -5(x-4) - 7$
④ $y = 5(x-4) + 7$

1) 1
2) 2
3) 3
4) 4

3.

A company that manufactures radios first pays a start-up cost, and then spends a certain amount of money to manufacture ~~each~~ radio. If the cost of manufacturing r radios is given by the function $c(r) = 5.25r + 125$, then the value 5.25 best represents

1) the start-up cost
2) the profit earned from the sale of one radio
3) the amount spent to manufacture each radio
4) the average number of radios manufactured

4.

What is the solution to $2h + 8 > 3h - 6$

1) $h < 14$
2) $h < \frac{14}{5}$
3) $h > 14$
4) $h > \frac{14}{5}$

$-2h \quad -2h$
$8 > h - 6$
$+6 \quad +6$
$14 > h$
$h < 14$

5.

Each day Toni records the height of a plant for her science lab. Her data are shown in the table below.

Day (n)	1	2	3	4	5
Height (cm)	3.0	4.5	6.0	7.5	9.0

0
1.5

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

$h(n) = 1.5n + 1.5$

Check

$1.5(5) + 1.5 = (9)$

True ☺

$1.5(1) + 1.5$
$1.5 + 1.5 = (3)$

6.

Determine the smallest integer that makes $-3x+7-5x<15$ true.

$-3x+7-5x<15$

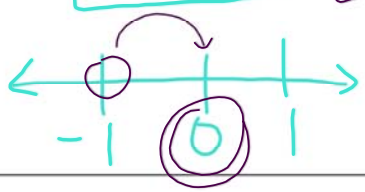
$-8x+7<15$

$-7 \quad -7$

$\frac{-8x}{-8} < \frac{8}{-8}$

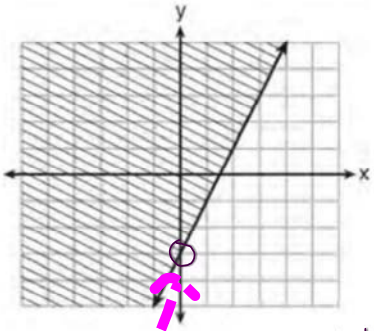
$x > -1$

0



7.

Which inequality is represented by the graph below?



1) $y \le 2x-3$
2) $y \ge 2x-3$
3) $y \le -3x+2$
4) $y \ge -3x+2$

SOLID LINE → ≥ ≤
DOTTED LINE → > <

8.

Max purchased a box of green tea mints. The nutrition label on the box stated that a serving of three mints contains a total of 10 Calories. On the axes below, graph the function, C, where $C(x)$ represents the number of Calories in x mints.

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X	Y1
-4	9
-3	7
-2	5
-1	3
0	1
1	-1
2	-3
3	-5
4	-7
5	-9
6	-11

X= -4

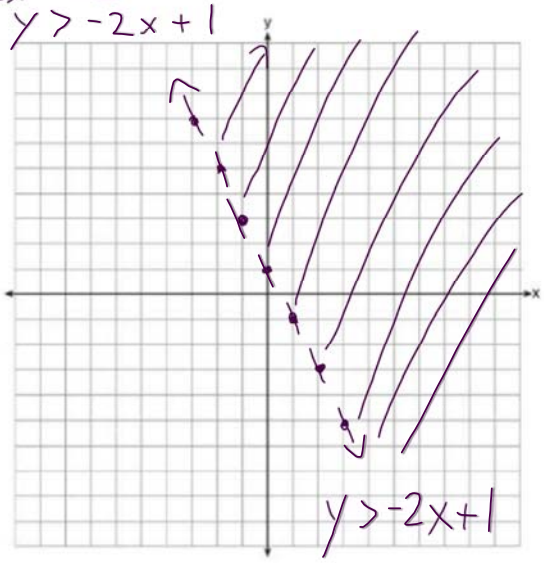
determine the total number of mints in the box.

9.

On the set of axes below, graph the inequality $2x+y>1$.

$-2x \quad -2x$

$y > -2x+1$



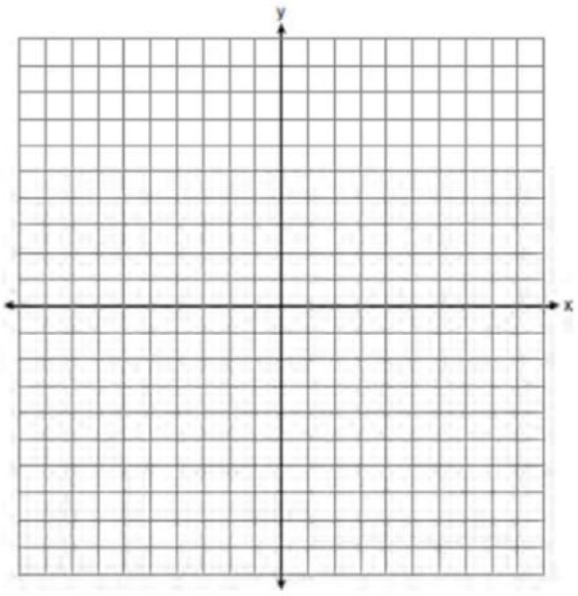
Homework/Practice Questions

1.
Solve the inequality below to determine and state the smallest possible value for x in the solution set.

$$3(x+3) \le 5x-3$$

2.
Sue and Kathy were doing their algebra homework. They were asked to write the equation of the line that passes through the points $(-3,4)$ and $(6,1)$. Sue wrote $y-4=-\frac{1}{3}(x+3)$ and Kathy wrote $y=-\frac{1}{3}x+3$. Justify why both students are correct.

3.
Graph the inequality $y+4<-2(x-4)$ on the set of axes below.



4.
Which chart could represent the function $f(x)=-2x+6$?

1)

x	f(x)
0	6
2	10
4	14
6	18

2)

x	f(x)
0	4
2	6
4	8
6	10

3)

x	f(x)
0	8
2	10
4	12
6	14

4)

x	f(x)
0	6
2	2
4	–2
6	–6