Algebra 2 (lvl 2) **Name_____**

Final Exam - Day 1

Part A: Multiple Choice

Directions: For problems 1-5 circle the correct response. Each problem is with 2 points.

1. In a survey about a proposed change to school policy, 100 students were asked if they favor the change, oppose the change, or have no opinion about the change. The responses are indicated in the chart below.

	Men	Women	Total
Favor	18	9	27
Oppose	12	25	37
No opinion	20	16	36
Total	**50**	**50**	**100**

Find the probability that a randomly selected respondant *opposes* or *has no opinion* about the change in policy.

a. 0.1332 **b.** 0.73 **c.** 0.096 **d.** 0.69 **e.** 0.144

2. Solve the equation $3x^2 = 57x$ using the method of your choice. You might want to try graphing or the quadratic formula. The value(s) of x that solve the equation are:

a. $x = 19$ **b.** $x = -19$ **c.** $x = 19$ and $x = 0$ **d.** $x = -19$ and $x = 0$ **e.** $x = 0$

3. Find $g(-1)$ if $g(x) = -\left(\frac{1}{2}\right)^x$.

a. $-\frac{1}{2}$ **b.** $\frac{1}{2}$ **c.** 0 **d.** -2 **e.** 2

4. In how many ways can the first three positions occur in a horse race with 11 horses?

a. 165 **b.** 30 **c.** 6 **d.** 990 **e.** 860

5. Two dice are rolled. What is the probability that the numbers shown add up to 3?

a. $\frac{1}{36}$ **b.** $\frac{1}{3}$ **c.** $\frac{1}{18}$ **d.** $\frac{1}{9}$ **e.** $\frac{2}{9}$

For instructor's use only:
score _____ out of 39

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Part B: Completion Problems

In this section show all work in the spaces provided. Write your final answers on the lines provided**.**

1. (4 points) Solve the following system of equations using the method of your choice.

$4x + 2y = 8,$
$2x - 3y = -4$

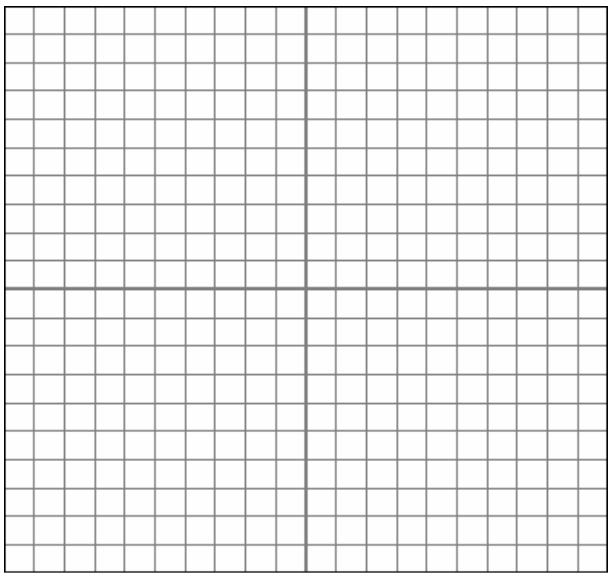
Solution: $x =$ _____ and $y =$ _____

2. (6 points) Let $h(x) = -2x^2 - 1$. Answer the following questions about h.

a. Complete the table below for the given values of x.

b. On the grid below, make a graph of h.

x	$h(x)$
-2	
-1	
0	
1	
2	



c. Find all values of x for which $h(x) = -9$. _____

3. (5 points) Suppose that if a store sells x pieces of a clothing item, the profit in dollars will be given by the function formula $P(x) = -x^2 + 8x$. The graph of $P(x)$ is given below.

a. Evaluate $P(3)$. Explain the meaning of $P(3)$ in the context of this problem.

_____

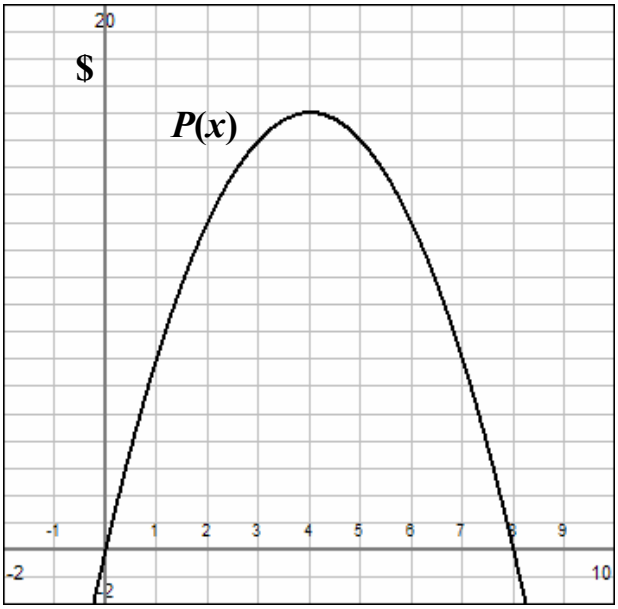
_____

_____

_____

b. If the store makes a profit of 12 dollars, about how many pieces of clothing were sold?

_____



c. What is the maximum possible profit? How many pieces of clothing would need to be sold to get the maximum profit?

Maximum profit _____

Number of pieces_____

4. (2 points) Suppose you are ordering a cell phone, and you must make the following choices.

- One of these colors must be chosen: red, blue, white, or green.
- One of these sizes must be chosen: small, medium, or large.
- One of these types of cases must be chosen: leather, plastic, denim, or cotton.

How many different possibilities are there when you order your phone?

_____

5. (5 points) The graph of line L is shown on the grid.

a. Find the slope of the line.

_____

b. Find the y-intercept of the line.

_____

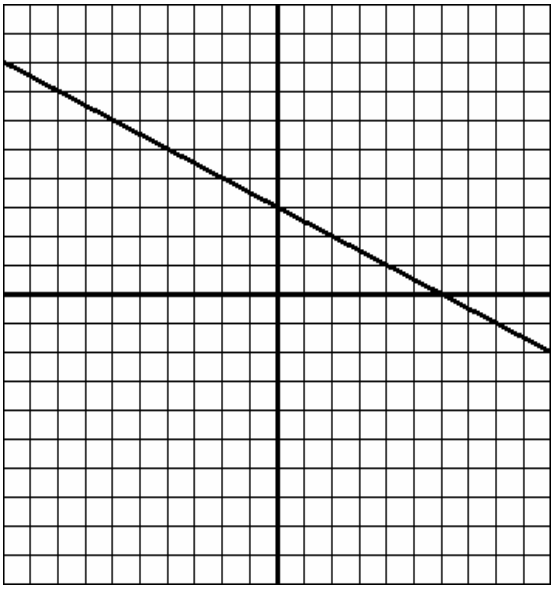
c. Write an equation for the line.

_____

d. Draw a line that is parallel to line L.

e. Write an equation for the line you drew in part **d**.

_____



6. (7 points) Here are the weights in pounds of the students in a fourth grade class.

62, 65, 68, 70, 72, 75, 75, 76, 77, 78, 80, 81, 82, 84, 87, 87, 90

a. Represent the students' weights as a stem-and-leaf plot (stemplot).

stem	leaves

b. Draw a box-and-whisker plot on the number line given below.

60 65 70 75 80 85 90 95