

Name: _____

Test 2

Systems of Equations

Important formulae: $d = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$, $y = ax + b$, $a = \frac{y_2 - y_1}{x_2 - x_1}$

Question	Points	Score
1	2	
2	2	
3	2	
4	2	
5	4	
6	4	
7	4	
Total:	20	



Part A: Multiple Choice Questions - Circle the correct answer

(2 points) 1. Which is the solution of the following system of equations?

$$\begin{cases} 2x + y = 5 \\ 4 - x = y \end{cases}$$

A. $S = \{(3, 1)\}$

B. $S = \{(1, 3)\}$

C. $S = \{(-3, 1)\}$

D. $S = \{(-1, 3)\}$

(2 points) 2. Which statement correctly classifies the following system of equations?

$$\begin{cases} x + y = 1 \\ 2x + y = 2 \end{cases}$$

A. Indeterminate \rightarrow Infinitely many solutions

B. Incompatible \rightarrow No solutions

C. Compatible \rightarrow One unique solution

D. Determinate \rightarrow One unique solution

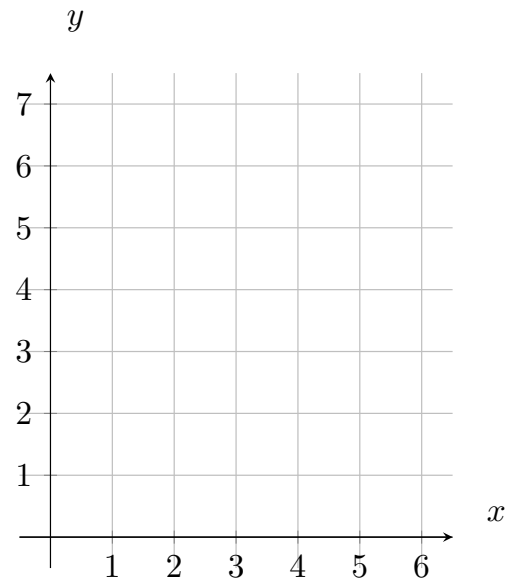
Part B: Short Answer Questions

- (2 points) 3. To raise money for the fight against juvenile diabetes, a school organizes a walk during three afternoons in which every student and teacher who participates must raise a certain amount of money. If x is the amount of money raised by each student who participated and y is the amount raised by each teacher, then the total amount of money raised each of the first two afternoons is given by the system

$$\begin{cases} 110x + 25y = 2760 \\ 90x + 12y = 1920 \end{cases}$$

How much money did each student have to raise to take part in the walk?

- (2 points) 4. At a bookstore, Sylvie pays \$12 for 3 notebooks and 2 pens whereas Katherine pays \$11 for 1 notebook and 3 pens. Letting x represent the cost of a notebook and y represent the cost of a pen, represent this system of equations graphically.



Part C: Long Answer Questions

- (4 points) 5. You are running a concession stand at a basketball game and are selling hot dogs and sodas. Each hot dog costs \$1.50 and each soda costs \$0.50. At the end of the night you made a total of \$78.50. You sold a total of 87 hot dogs and sodas combined. How many hot dogs were sold and how many sodas were sold?

- (4 points) 6. Dried apricots worth \$3.25 a pound were mixed with dried prunes worth \$4.79 a pound to produce a mixture of dried fruit worth \$3.79 a pound. How much of each kind of fruit was used to produce 25 pounds of the mixture.

- (4 points) 7. A jar contains red, green and yellow marbles. Phil, Eric and Ellie each draw 8 marbles. The number of points awarded for each yellow marble drawn is 10 points. Phil drew 4 red marbles, 2 green marbles and 2 yellow marbles for a total of 42 points. Eric drew 2 red marbles, 5 green marbles and 1 yellow marble for a total of 33 points. If Ellie drew 3 red marbles, 3 green marbles and 2 yellow marbles, who won the game?