Math 10

Lesson 5-4 Answers

Assignment

1.

- a)
- i) 1
- ii) -1
- iii) 1
- iv) -1
- b) i and iii, and ii and iv are parallel
- c) i intersects with ii and iv, iii intersects with ii and iv

2.

- a) A and C or B and C have one solution since they intersect.
- b) Since A and B are parallel, they would have no solutions.

3.

$$x + 2y = 6$$
a) $-(x + y = -2)$

$$y = 8$$

$$x + 2y = 6$$

$$x + 2(8) = 6$$

$$x + 16 = 6$$

$$x = -10$$

The solution is x = -10 and y = 8.

b)
$$2 \times (3x + 5y = 9)$$
 $-(6x + 10y = 18)$ $0 = 0$

The lines are coincident, therefore there are an infinite number of solutions.

c)
$$2 \times (2x - 5y = 30)$$
 $-(4x - 10y = 15)$ $0 = 45$

The lines are parallel, therefore no solutions are possible.

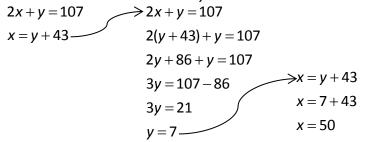
d)
$$2 \times (2x + 3y = 4)$$

 $4x + 6y = 7$
 $4x + 6y = 8$
 $-(4x + 6y = 7)$
 $0 = 1$

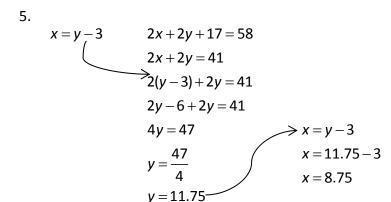
The lines are parallel, therefore no solutions are possible.

L5-4

4. Let x be the number of wins and y be the number of losses.



The number of overtime wins was 50 and the number of overtime losses was 7.



The values of x and y are 8.75 and 11.75 respectively.

6. Nadine has a cup of nickels and a cup of dimes. The total number of coins is 300 and their value is \$23.25. How many coins are in each cup?

Let *n* be the number of nickels and *d* be the number of dimes.

$$n+d=300$$
 $.05n+.10d=23.25$ $n=300-d$ $n=300-d$ $.05(300-d)+.10d=23.25$ $n=300-165$ $n=135$ $n=135$ $n=135$

There are 165 dimes and 135 nickels.

7. Let S be the money in savings and C be the money in chequing.

$$S+C=85$$
 $2S+2C=170$
 $S=85-C$ $2(85-C)+2C=170$
 $170-2C+2C=170$
 $0=0$

From the information given it is not possible to determine the amount in each account.

L5-4

8. Let x be the number of people on Saturday and y the number of people on Sunday.

$$x + y = 568$$
 $x + 44 = y$ $x = 568 - y$
 $x = 568 - y$ $568 - y + 44 = y$ $x = 568 - 262$
 $524 = y + y$ $x = 306$
 $524 = 2y$
 $262 = y$

The attendance for Saturday was 306 and for Sunday was 262.

9. Let x be the mass of the large container and y be the mass of the small container.

$$2x + y = 3
y = 3 - 2x
6x + 3(3 - 2x) = 9
6x + 9 - 6x = 9
0 = 0$$

From the information given it is not possible to determine the mass of each container.

10. Let *a* be the number of adults and *s* the number of students.

$$a+s=75$$

 $a=75-s$
 $5a+3s=275$
 $5(75-s)+3s=275$
 $375-5s+3s=275$
 $-2s=-100$
 $a=75-50$
 $s=50$
 $a=25$

There were 25 adults and 50 students.

L5-4