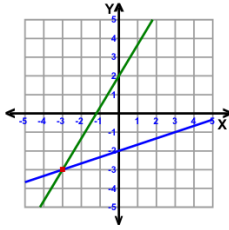


Semester 2 Exam Practice - Systems of Equations / Inequalities
(Multiple Choice 1-8 & 26) + (One Constructed Response)

C 1. Which ordered pair is the solution of the system of linear equations whose graph is shown?

- a) $(-1, 0)$
- b) $(0, 2)$
- c) $(-3, -3)$
- d) $(0, -2)$



B 2. The sum of two numbers is 32, and the smaller number is $\frac{1}{3}$ of the larger number. What are the numbers?

- a) 12 and 20
- b) 8 and 24
- c) 10 and 30
- d) -40 and 8

A 3. Solve the system.

$$\begin{cases} y = 6x - 11 \\ -2x - 3y = -7 \end{cases}$$

- a) $x = 2$ and $y = 1$
- b) $x = 1$ and $y = 2$
- c) $x = -2$ and $y = -1$
- d) $x = -1$ and $y = -2$

 4. Solve the system.

$$\begin{cases} 8x + 14y = 4 \\ -12x - 14y = -20 \end{cases}$$

- a) $x = 4$ and $y = 2$
- b) $x = -2$ and $y = 4$
- c) $x = -4$ and $y = -2$
- d) $x = 4$ and $y = -2$

B 5. The Rocket Coaster has 15 cars, some that hold 4 people and some that hold 6 people. There is room for 72 people altogether. How many 4-passenger cars are there? How many 6-passenger cars are there?

- a) 4-passenger cars = 72
6-passenger cars = 15
- b) 4-passenger cars = 9
6-passenger cars = 6
- c) 4-passenger cars = 6
6-passenger cars = 9
- d) 4-passenger cars = 4
6-passenger cars = 6

 6. How many solutions does each of the following system of equations have? One solution, no solution, or infinitely many solutions.

$$\begin{cases} 4x + 4y = 8 \\ x + y = 2 \end{cases}$$

Infinitely Many

$$\begin{cases} 3x + 2y = -3 \\ 6x + 4y = 8 \end{cases}$$

No Solution

$$\begin{cases} 8x + 3y = 12 \\ -4x - 6y = 6 \end{cases}$$

One Solution

B 7. Which system has infinitely many solutions?

a. $\begin{cases} 7x - 2y = 8 \\ x + y = 8 \end{cases}$

b. $\begin{cases} -8x + 12y = -16 \\ 2x - 3y = 4 \end{cases}$

c. $\begin{cases} 5x + 5y = 5 \\ -5x - 5y = 5 \end{cases}$

B 8. Jonah is going to the store to buy candles. Small candles cost \$3.50 and large candles cost \$5.00. He needs to buy at least 20 candles, and he cannot spend more than \$80. Write a system of linear inequalities that represent the situation.

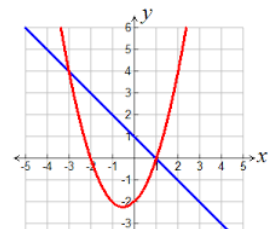
a) $\begin{cases} s + l \leq 20 \\ 3.5s + 5l \leq 80 \end{cases}$

b) $\begin{cases} s + l \geq 20 \\ 3.5s + 5l \leq 80 \end{cases}$

c) $\begin{cases} s + l \leq 20 \\ 3.5s + 5l \geq 80 \end{cases}$

d) $\begin{cases} s + l = 20 \\ 3.5s + 5l = 80 \end{cases}$

D 26. What are the solutions to the given system?



- a) $(-2, 0)$ and $(1, 0)$
- b) $(0, -2)$ and $(0, 1)$
- c) $(-3, 4)$ and $(4, -3)$
- d) $(-3, 4)$ and $(1, 0)$

Semester 2 Exam Practice - Systems of Equations / Inequalities
(Multiple Choice 1-8 & 26) + (One Constructed Response)

Systems of Equations – Sample Constructed Response:

- **Kristin spent \$131 on shirts. Fancy shirts cost \$28 and plain shirts cost \$15. She bought a total of 7 shirts altogether.**

Let f = the number of fancy shirts that Kristen bought.

Let p = the number of plain shirts that Kristen bought.

- a) Write a system of equations to represent this situation.

$$\begin{aligned}f + p &= 7 \\ 28f + 15p &= 131\end{aligned}$$

- b) Solve the system to determine how many fancy shirts and how many plain shirts Kristen bought.

$$\begin{aligned}f &= 2 \\ p &= 5\end{aligned}$$

2 fancy and 5 plain shirts

-
- **There are 13 animals in the barn. Some are chickens and some are pigs. There are 40 legs in all.**

Let c = the number of chickens in the barn

Let p = the number of pigs in the barn

Assuming each chicken has 2 legs and each pig has 4 legs.

- a) Write a system of equations to represent this situation.

$$\begin{aligned}c + p &= 13 \\ 2c + 4p &= 40\end{aligned}$$

- b) Solve the system to determine how many of each animal are in the barn.

6 chickens and 7 pigs

$$\begin{aligned}c &= 6 \\ p &= 7\end{aligned}$$