Algebra II Unit 1 Review Name: Key

Solve the system using the substitution method.

1.

$$3x - y = 4$$
$$-9x + 3y = -12$$

infinitely many solutions

2.

$$x + 2y = 2$$
$$7x - 3y = -20$$

(-2, 2)

Solve the system using elimination/combination.

3.

$$-5x + 2y = -10$$
$$3x - 6y = -18$$

(4, 5)

4.

$$x + 2y = 9$$
$$-x + 6y = -1$$

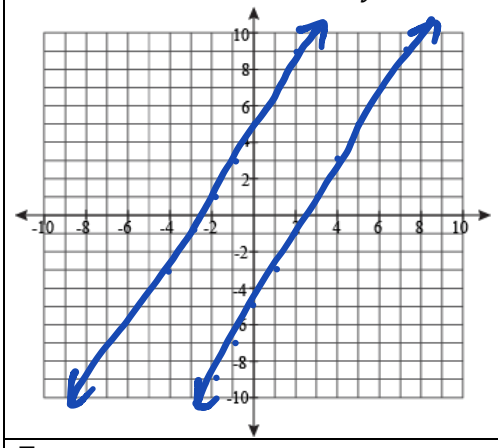
(7, 1)

Solve the system by graphing.

5.

$$2x - y = -5$$
$$-4x + 2y = -10$$

$y = 2x + 5$
$y = 2x - 5$

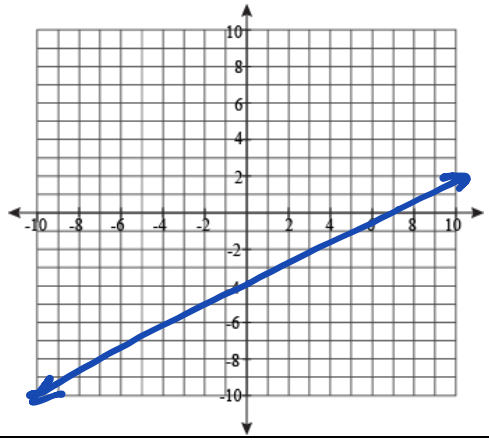


No Solution

6.

$$4x - 7y = 28$$
$$x - \frac{7y}{4} = 7$$

$y = \frac{4}{7}x - 4$

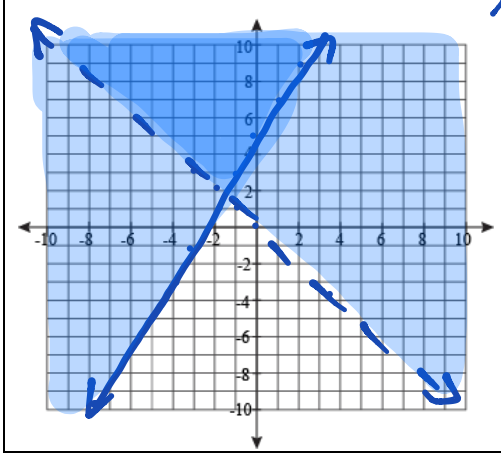


infinitely many Solutions

7.

$$2x - y \leq -5$$
$$x + 2y > 0$$

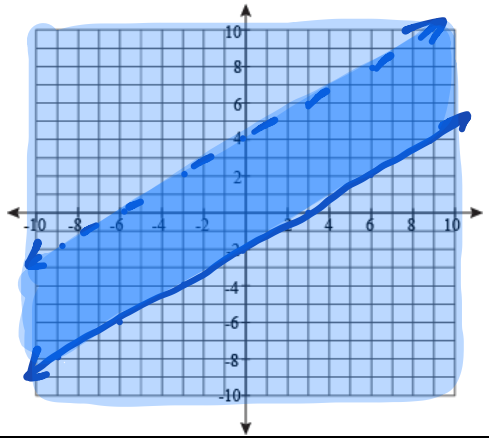
$y \geq 2x + 5$
$y > -\frac{x}{2}$



8.

$$-2x + 3y < 12$$
$$2x - 3y \leq 6$$

$y < \frac{2}{3}x + 4$
$y \geq \frac{2}{3}x - 2$



Solve the system using any method.

9.

$$-5x + 7y = 11$$
$$-5x + 3y = 19$$

(5,-2)

10.

$$x - y = 3$$
$$-2x + 2y = 6$$

No Solution

11.

$$2x - 5y = 10$$
$$-3x + 4y = -15$$

(5,0)

12.

$$-3x + y = 11$$
$$5x - 2y = -16$$

(-6,-7)

13. Find the value of two numbers if their sum is 12 and their difference is 4.

(8, 4)

14. The state fair is a popular field trip destination. This year the senior class at High School A and the senior class at High School B both planned trips there. The senior class at High School A rented and filled 8 vans and 8 buses with 240 students. High School D rented and filled 4 vans and 1 bus with 54 students. Every van had the same number of students in it as did the buses. Find the number of students in each van and in each bus.

(8,22)

15. Brenda's school is selling tickets to a spring musical. On the first day of ticket sales the school sold 3 senior citizen tickets and 9 child tickets for a total of $75. The school took in $67 on the second day by selling 8 senior citizen tickets and 5 child tickets. What is the price of one senior citizen ticket and one child ticket?

(4,7)

16. The sum of the digits of a certain two-digit number is 7. Reversing its digits increases the number by 9. What is the number?

3

17. Daniel's grandfather often complains about how he used to be able to buy a huge lunch of 3 hamburgers and 2 fish sandwiches for one $7.35. Write a constraint equation for the model.

18. Two people rent a moving truck from the same company. The moving company charges per day, with additional charges for each mile. The first person pays $1,845 to move 2,060 miles over 5 days, and the second person pays $840 to move 880 miles over 3 days. Write two equations that would represent the constraints in this situation.

19. Jamie is looking for loose coins in his couch to purchase a pack of chewing gum for $1.25. He found 10 dimes and quarters. Write a system of equations to determine home many dimes and quarters he must find to have at least $1.25. How many dimes and quarters must he find?

20. It is Lindsey's turn to provide snacks for her troops next meeting. She is planning to purchase bags of fruit for $1 each. She only has $20 to spend.

a. What inequality could be used to determine the combination of purchases needed?

b. Explain two possible combinations of popcorn and fruit purchases given the budget of $20.