

Algebra I

Worksheet 6.3

Name _____

Rewrite the linear system so that the like terms are arranged in columns.

1. $3x - y = 23$
 $y + 8x = 11$

2. $8x = y + 1$
 $3y + 8x = 7$

3. $7x - 4y = 8$
 $4y = -7x + 9$

4. $7x - y = 13$
 $y = 14x - 3$

5. $14 = x - 3y$
 $x + 10y = -3$

6. $8x + 1 = 4y$
 $4y + 3 = 14x$

Describe the first step you would use to solve the linear system.

7. $x + 4y = 1$
 $6x - 4y = -3$

8. $2x + 3y = -1$
 $3y = -2x + 3$

9. $5x + y = 8$
 $x + y = -6$

10. $-4x - 4y = 7$
 $4y - x = 2$

11. $6x - 4y = 5$
 $-6x - 5y = 7$

12. $3x = y - 9$
 $-5x + y = 8$

Solve the linear system by using elimination.

13. $6x - y = 5$
 $3x + y = 4$

14. $x + 4y = 9$
 $-x - 2y = 3$

15. $5x - 3y = -14$
 $x + 3y = 2$

16. $2x + y = 7$
 $x + y = 1$

17. $4x + 3y = 18$
 $4x - 2y = 8$

18. $-5x + 2y = 22$
 $3x + 2y = -10$

19. $3x = y + 5$
 $2x + y = 5$

20. $x - 4y = -19$
 $3y - 15 = x$

21. $y - 3 = -2x$
 $2x + 3y = 13$

22. $6x - 3y = 36$
 $5x = 3y + 30$

23. $-4x + y = -27$
 $-y + 6x = 43$

24. $9x - 4y = -55$
 $3x = -4y - 21$

- 25. Rollerblading** One day, you are rollerblading on a trail while it is windy. You travel along the trail, turn around and come back to your starting point. On your way out on the trail, you are rollerblading against the wind. On your return trip, which is the same distance, you are rollerblading with the wind. You can only travel 3 miles an hour against the wind, which is blowing at a constant speed. You travel 8 miles an hour with the wind. Use the models below to write and solve a system of equations to find the average speed when there is no wind and the speed of the wind.

Against the wind: Your speed with no wind $-$ Speed of wind $=$ Your speed

With the wind: Your speed with no wind $+$ Speed of wind $=$ Your speed

- 26. Car Wash** A gas station has a car wash. If you get your gas tank filled, then you are charged a lower flat fee x in dollars for a car wash plus y dollars per gallon for the gasoline. Two cars fill up with regular gasoline and both get a car wash. One car uses 8 gallons of gasoline and pays \$22.80 for the gas and car wash and the other car uses 6 gallons of gasoline and pays \$18.60 for the gas and car wash. Find the fee for the car wash and the cost of one gallon of regular gasoline.

