Name _____ Date _____

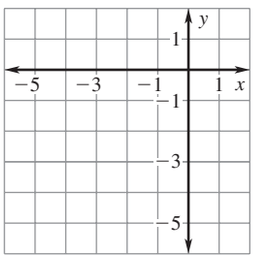
CHAPTER 7

Chapter Test C

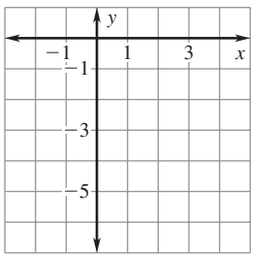
For use after Chapter 7

Solve the linear system by graphing.

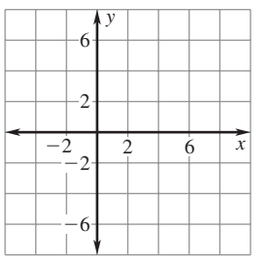
1. $3x + 5y = -18$
$4x + 2y = -10$



2. $2x - y = 6$
$4x - 2y = 8$



3. $3x + 4y = 24$
$\frac{3}{2}x + y = 3$



Solve the linear system using substitution.

4. $3x - 2y = 6$
$4y = -8$

5. $4x + 3y = 11$
$3x - y = 5$

6. $4x + 5y = 18$
$3x - 9y = -12$

7. $x + 6y = -17$
$0.4x + 0.5y = -1.1$

8. $x - \frac{1}{2}y = 1$
$\frac{2}{3}x - \frac{1}{3}y = 1$

9. $4x + \frac{1}{3}y = \frac{8}{3}$
$\frac{1}{2}x + \frac{3}{4}y = -\frac{5}{2}$

10. A restaurant owner wants to add imitation maple syrup that costs $4.00 per liter to 50 liters of pure maple syrup that costs $9.50 per liter. How many liters of imitation maple syrup should be added to make a mixture that costs $5.00 per liter?

Solve the linear system using elimination.

11. $3x - 6y = 6$
$9x - 3y = 8$

12. $4x + 3y = 4$
$8x + 6y = 8$

13. $3x - 4y = 8$
$5x + 3y = -6$

14. $5y + 2x = 5x + 1$
$3x - 2y = 3 + 3y$

15. $5x - 2y = 8x - 1$
$2x + 7y = 4y + 9$

16. $\frac{2}{5}x - \frac{1}{3}y = 1$
$\frac{3}{5}x + \frac{2}{3}y = 5$

17. Flying with the wind, a pilot travels 600 miles between two cities in four hours. The return trip into the wind takes five hours. The speed of the wind remains constant during the trip. Find the average speed of the plane with no wind and the speed of the wind.

Answers

1. _____
See left.

2. _____
See left.

3. _____
See left.

4. _____

5. _____

6. _____

7. _____

8. _____

9. _____

10. _____

11. _____

12. _____

13. _____

14. _____

15. _____

16. _____

17. _____

Name _____ Date _____

CHAPTER 7

Chapter Test C *continued*

For use after Chapter 7

Without solving the linear system, tell whether the linear system has *one solution*, *no solution*, or *infinitely many solutions*.

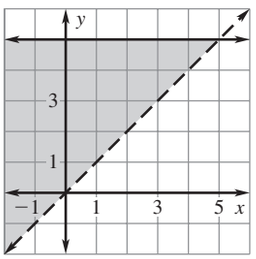
18. $12x - 16y = 8$
$3x - 4y = 2$

19. $0.4x + 0.5y = 0.2$
$0.3x - 0.1y = 1.1$

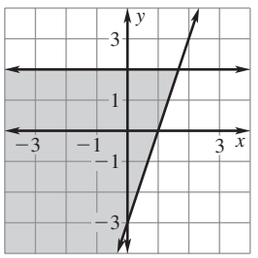
20. $0.2x - 0.6y = 0.6$
$0.4x - 1.2y = 2.4$

Write a system of linear inequalities for the shaded region.

21.



22.

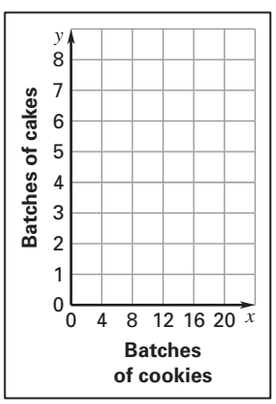


In Exercises 23–25, use the following information.

A bakery sells cookies and cakes. The table shows the time that it takes to bake and decorate each batch of cookies and each batch of cakes, and the time the bakery can devote to baking and decorating cookies and cakes.

	Cookies	Cakes	Available Time
Time to bake (hours)	1.5	2	15
Time to decorate (hours)	$\frac{2}{3}$	3	13

23. Write and graph a system of linear inequalities for the number x of batches of cookies and the number y of batches of cakes that the bakery can make under the given constraints.



24. Find the vertices (corner points) of the graph.

25. The bakery makes a profit of $20 for each batch of cookies and $30 for each batch of cakes. The profit P is given by the equation $P = 20x + 30y$. Find the profit for each ordered pair in Exercise 24. Which vertex results in the maximum profit?

Answers

18. _____

19. _____

20. _____

21. _____

_____

22. _____

_____

23. _____

_____

_____

_____

See left.

24. _____

25. _____

_____

_____