

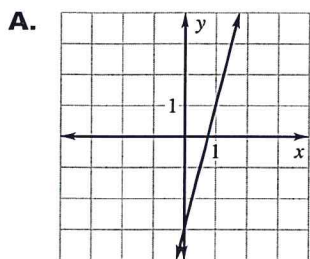
LESSON
3.1

Practice B

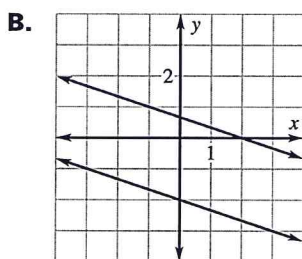
For use with pages 163–168

Match the linear system with its graph. Then classify the system as **consistent and independent**, **consistent and dependent**, or **inconsistent**.

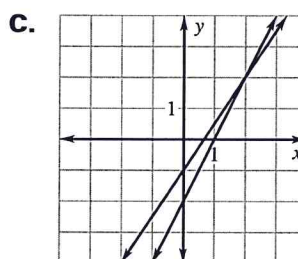
1. $3x - 2y = 2$
 $-2x + y = -2$



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

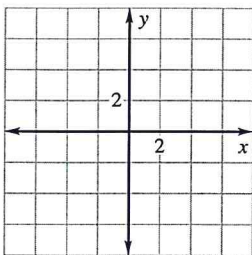


3. $x + 3y = 2$
 $-3x - 9y = 18$

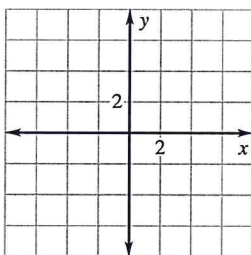


Graph the linear system and estimate the solution. Then check the solution algebraically.

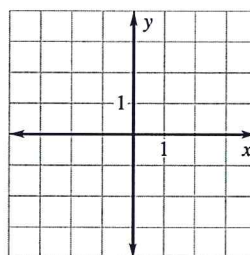
4. $2x + 3y = 8$
 $-x + y = -4$



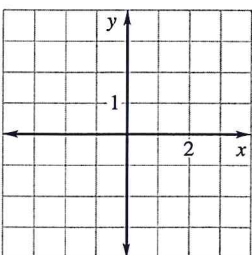
5. $3x + 5y = -4$
 $2x - y = -7$



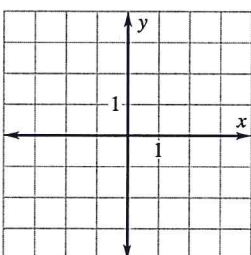
6. $x - 2y = 4$
 $4x + 2y = 6$



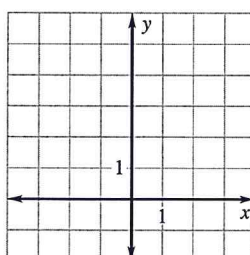
7. $3x + y = 3$
 $-2x + y = 3$



8. $5x - 2y = -1$
 $x - 3y = 5$



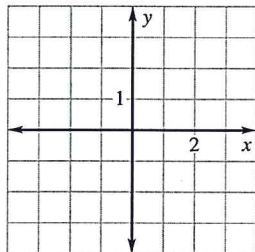
9. $x - 2y = -5$
 $-2x + 6y = 18$



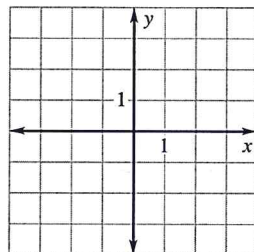
LESSON
3.1

Practice B *continued*
For use with pages 163–168

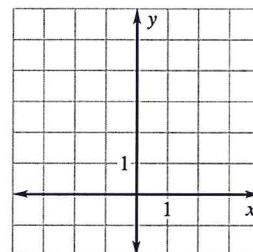
10. $3x + 3y = 3$
 $x + 2y = 0$



11. $2x - 4y = 2$
 $-2x + 3y = 0$



12. $5x - 3y = -17$
 $4x + 5y = 16$



Solve the system. Then classify the system as *consistent and independent*, *consistent and dependent*, or *inconsistent*.

13. $x - 2y = 5$
 $2x - 4y = 10$

14. $5x + y = 16$
 $-3x + y = 0$

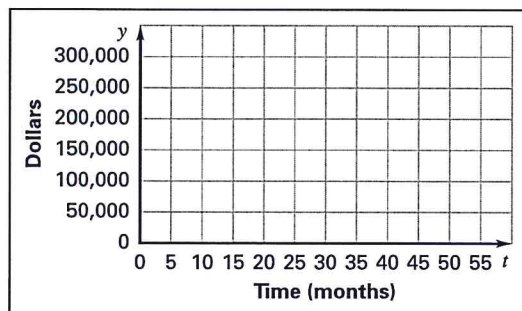
15. $2x + \frac{1}{2}y = 4$
 $12x - 6y = -12$

- 16. Concert** A vendor sold 200 tickets for an upcoming rock concert. Floor seats were \$36 and stadium seats were \$28. The vendor sold \$6080 in tickets. How many \$36 and \$28 tickets did the vendor sell?

In Exercises 17–20, use the following information.

Break-Even Analysis You purchase a music store for \$115,000. The estimated monthly revenue is \$5500 and expected monthly costs are \$3200.

- 17.** Let R represent the revenue during the first t months. Write a linear model for R .
18. Let C represent the costs during the first t months including the purchase price. Write a linear model for C .
19. Graph the revenue and cost linear models on the same coordinate plane.



- 20.** How many months will it take until revenue and costs are equal (the “break-even point”)?

LESSON
3.2**Practice B**

For use with pages 170–177

Solve the system using the substitution method.

1. $x + 2y = 6$

$3x - 2y = 2$

4. $2x - 3y = 3$

$-2x + y = -4$

2. $x + 3y = 3$

$2x - 4y = 6$

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

$6x - y = 6$

3. $4x + y = 7$

$2x + 5y = -1$

6. $8x + 2y = 2$

$x + 3y = 14$

Solve the system using the elimination method.

7. $-3x + 3y = 3$

$3x + y = 9$

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

$6x + y = 5$

8. $5x - y = -9$

$2x + y = 2$

11. $3x + 2y = 1$

$4x + 6y = 7$

9. $-5x + 12y = 20$

$x - 2y = -6$

12. $7x - 3y = 6$

$-2x + 5y = -10$

Solve the system using any algebraic method.

13. $5x + 7y = -2$

$2x - 7y = 9$

16. $8x - 5y = -17$

$-2x + y = 6$

19. $2x - 5y = 3$

$-4x + 10y = -6$

14. $x + 3y = 1$

$3x + 7y = 1$

17. $3x - 8y = 0$

$-2x + 5y = -2$

20. $8x + 3y = 10$

$-6x + y = -12$

15. $4x + 6y = 8$

$2x + 3y = 3$

18. $4x - 6y = 2$

$5x + 3y = 1$

21. $5x + 4y = -18$

$2x + 3y = -24$

22. **CDs and Cassettes** From 1990 to 1998, the manufacturer's shipments for audio cassettes, A (in millions), and compact discs, C (in millions), can be modeled by the equations

$A = -31.8t + 322$ Audio cassette shipments

$C = 42.8t + 110$ Compact disc shipments

where t is the number of years since 1990. During what year did the number of compact discs shipped surpass the number of audio cassettes shipped?

23. **Hair Salon** A hair salon receives a shipment of 84 bottles of hair conditioner to use and sell to customers. The two types of conditioners received are type A, which is used for regular hair, and type B, which is used for frizzy hair. Type A costs \$6.50 per bottle and type B costs \$8.25 per bottle. The hair salon's invoice for the conditioner is \$588. How many of each type of conditioner are in the shipment?
24. **Birthday Gift** You and your sister decide to combine your weekly overtime earnings to buy a birthday gift for your mother. Your overtime rate is \$18 per hour and your sister's overtime rate is \$24 per hour. The total amount earned for the gift was \$288. If you worked two more hours of overtime than your sister, how many overtime hours did each of you work?

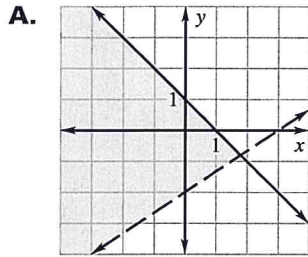
LESSON
3.3

Practice B

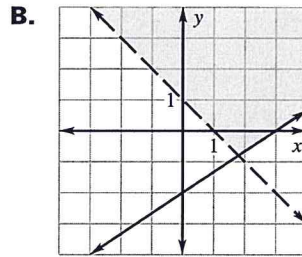
For use with pages 180–185

Match the system of inequalities with its graph.

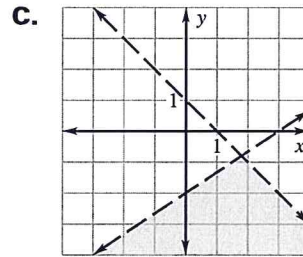
1. $x + y > 1$
 $-2x + 3y \geq -6$



2. $x + y < 1$
 $-2x + 3y < -6$

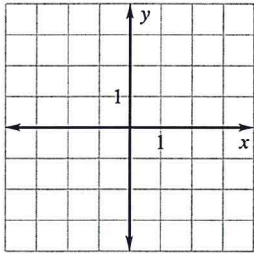


3. $x + y \leq 1$
 $-2x + 3y > -6$

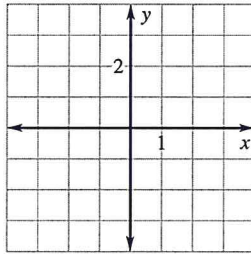


Graph the system of inequalities.

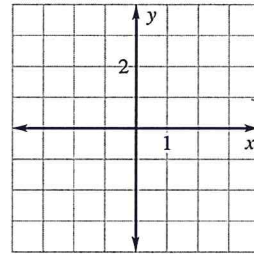
4. $x > -1$
 $y > -1$



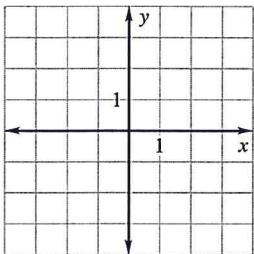
5. $x \geq -2$
 $y < 1$



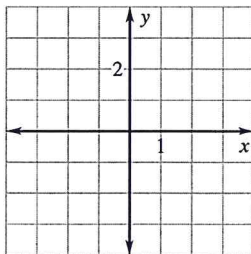
6. $y \leq 3$
 $y > 1$



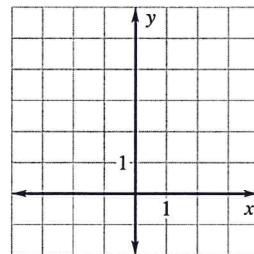
7. $x + y \geq 0$
 $-x + y \geq 0$



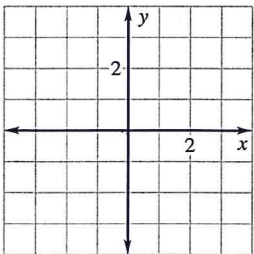
8. $y > -2x$
 $2x - y > 1$



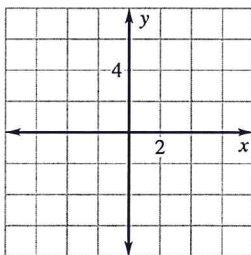
9. $2x + y < 5$
 $y > 2|x - 1|$



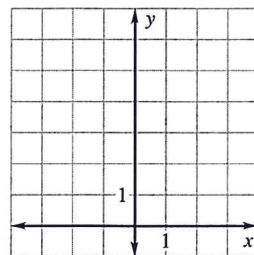
10. $x + 2y < 2$
 $3x + y \leq 3$



11. $y > 2x - 3$
 $x > -1$
 $y < 3$



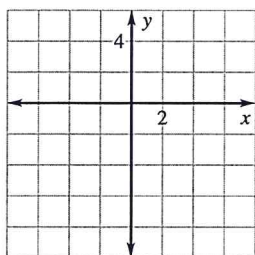
12. $y \leq |x| + 4$
 $x < 2$
 $y \geq 2$



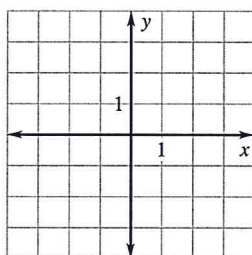
LESSON
3.3

Practice B *continued*
For use with pages 180–185

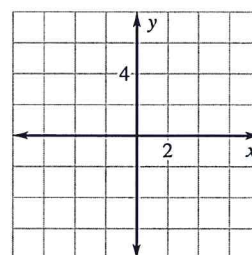
13. $y < \frac{1}{2}x + 3$
 $y \geq -2x - 3$
 $x \leq 3$



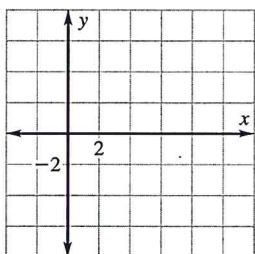
14. $x + y > -2$
 $-x + y > -2$
 $y \geq 0$



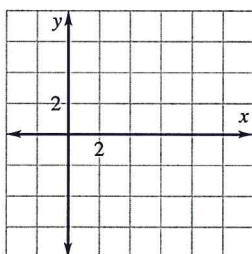
15. $y \leq -\frac{1}{3}x + 2$
 $y > 3x - 3$
 $x > -1$



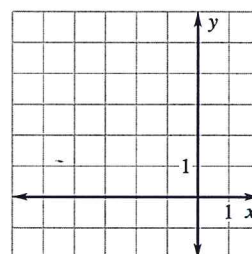
16. $x + 2y \leq 8$
 $x + 4y \geq 8$
 $x \geq 0$



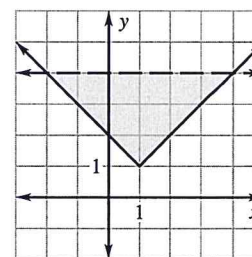
17. $x + 2y \leq 10$
 $2x + y \leq 8$
 $2x - 5y < 20$



18. $x + 2y \leq 5$
 $2x - 4y \leq -10$
 $3x + 6y > -12$



19. The diagram at the right shows the graph of a system of two inequalities. Write a system of inequalities that represents the graph.



In Exercises 20 and 21, use the following information.

Distance During a family trip, you share the driving with your dad. At most, you are allowed to drive for three hours. While driving, your maximum speed is 55 miles per hour.

20. Write a system of inequalities describing the possible number of hours t and distance d you may have driven.

21. Is it possible for you to have driven 160 miles?

LESSON
3.5**Practice B**

For use with pages 194–201

Tell whether the given ordered triple is a solution of the system.

1. $(2, 1, 3)$

$2x - y + 5z = 16$

$x - 3y + 2z = 5$

$x + 2y + z = 7$

2. $(5, -2, 2)$

$2x - y + z = 5$

$x + 2y - z = -1$

$-2x + y - 3z = -15$

3. $(3, 3, 4)$

$x + 2y - 2z = 1$

$7x - 4y + z = 11$

$2x - 3y + 2z = 5$

4. $(1, -1, 3)$

$4x + 2y + 3z = 11$

$x - 2y + z = 6$

$2x + y + 2z = 7$

5. $(0, 0, 2)$

$2x - 4y - 2z = -4$

$2x + 5y + 8z = 16$

$6x - 3y - z = 2$

6. $(5, -2, 3)$

$3x + 4y - 2z = 1$

$2x + 3y - z = 1$

$4x + 8y - z = 1$

Solve the system using any algebraic method.

7. $x + y - 5z = -5$

$y - 2z = 14$

$4y - 2z = 8$

8. $x - y + z = 5$

$2y + 3z = 14$

$-3y + 2z = 5$

9. $-3x + y - z = -2$

$2x - y - 2z = -12$

$4x + 2y + z = 1$

10. $x - 2y + z = -1$

$x + 2y - z = 7$

$x + y + z = 2$

11. $x - 2y + 4z = -19$

$2x + y - 3z = 14$

$3x + y + 2z = 5$

12. $x - 2y - 3z = -7$

$4x + 5y - 2z = -7$

$-2x + y + z = -7$

13. $8x - 2y + z = -6$

$-x + 3y - 2z = -15$

$3x - y + 4z = 13$

14. $2x + 2y + z = -5$

$2x + y + 3z = 7$

$-4x - 2y - 6z = -14$

15. $3x - 4y - 4z = 8$

$4x + 2y - 2z = 11$

$-5x + 8y + 3z = -9$

16. **Harvest Yields** A farmer makes three deliveries to the feed mill during one harvest. The harvest produced 2885 bushels of corn, 1335 bushels of wheat and 1230 bushels of soybeans. Use the table to write and solve a system of equations to find the total number of bushels in each delivery.

Crop	1st Delivery	2nd Delivery	3rd Delivery
Corn	50%	75%	40%
Wheat	30%	10%	30%
Soybeans	20%	15%	30%

17. **Harvest Earnings** The feed mill pays a farmer \$6930.00 for the 1st delivery, \$5475.00 for the 2nd delivery and \$8879.50 for the 3rd delivery. The table shows the number of bushels included in each delivery. Use the table to write and solve a system of equations to find the price per bushel that the farmer received for each crop.

Delivery	Corn	Wheat	Soybeans
1st Delivery	900	540	360
2nd Delivery	1125	150	225
3rd Delivery	860	645	645