

Aufmann/Barker/Lockwood

Test Bank with Chapter Tests



Intermediate Algebra with Applications

Fifth Edition

Aufmann/Barker/
Lockwood/Draper

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Fifth Edition

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Chapter Tests

Form A Tests

Free Response

NAME _____ SCORE _____

1. Find the additive inverse of -5 .
2. Let $x \in \{-2, 5, 8\}$. For which values of x is $x < 3$?
3. Simplify: $-5 + 4 - (-9) - 18$
4. Multiply: $-6(-3)(-14)$
5. Divide: $-272 \div (-17)$
6. Simplify: $|-72 \div 9|$
7. Simplify: $-2^2(-3)^2(-4)$
8. Write $\{x|x \geq -1\}$ using interval notation.
9. Simplify: $\frac{2}{3} - \frac{7}{12} + \frac{1}{2}$
10. Divide: $\frac{8}{15} \div \left(-\frac{3}{5}\right)$
11. Simplify: $-3.02 + 5.9 - 16.3$
12. Divide: $-23.148 \div 3.6$
13. Simplify: $12 - 2[3 - (-2)^2 \div 4] + 1$
14. Simplify: $24 - 3\left(\frac{5^2 - 9}{3 - 12}\right) \div \frac{2}{3}$

15. Evaluate $b^2 - (a^2 - c)$ when $a = -4$, $b = 2$, and $c = -3$.

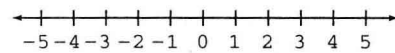
16. Evaluate $(2b^2 - 6c) \div (2a - b)$ when $a = 1$, $b = -3$, and $c = -2$.

17. Identify the property that justifies the statement $(x + y) + c = (y + x) + c$.

18. Identify the property that justifies the statement $-4(m - n) = -4m + 4n$.

19. Simplify: $-8x - 2[2y - 3(5x - 2y)]$

20. Graph: $(-2, \infty)$



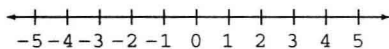
21. Translate and simplify “eleven more than three times the difference of a number and fifteen.”

22. A mixture contains four times as many peanuts as cashews. Express the amount of peanuts in the mixture in terms of the amount of cashews.

23. Find $A \cup B$ given $A = \{0, 1, 2, 3\}$ and $B = \{-2, 0, 2, 4\}$.

24. Find $A \cap B$ given $A = \{-4, -3, -2, -1, 0, 1, 2, 3, 4\}$ and $B = \{-5, -3, -1, 1, 3, 5\}$

25. Graph the solution set of $\{x|x > -2\} \cap \{x|x < 3\}$.



NAME _____

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1. Solve: $-12 = x + 7$

2. Solve: $\frac{4}{5}x = 16$

3. Solve: $x - \frac{5}{12} = -\frac{3}{8}$

4. Solve: $2x - 5 = 3 - 6x$

5. Solve: $2x - 3 = 5x + 7$

6. Solve: $\frac{3}{4}x - 2 = 4$

7. Solve: $4(3x - 2) = 5x - 3(7 - 2x)$

8. Solve: $\frac{2x - 3}{4} - 3 = 2x$

9. Solve: $\frac{x}{3} - \frac{5}{6} = \frac{x}{2} - \frac{5}{9}$

10. Solve: $4x - 7 < 7x - 13$
Write the solution in set-builder notation.

11. Solve: $3(2x - 4) > 5(x - 1) + 5$
Write the solution in set-builder notation.

12. Solve: $2x + 1 > 1$ and $5x - 6 < 4$
Write the solution in set-builder notation.

13. Solve: $3x - 5 < -2$ or $2x + 7 > 11$
Write the solution in set-builder notation.

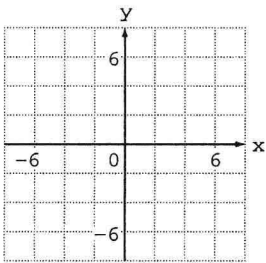
14. Four times the difference between a number and three is greater than the quotient of two times the number and five. Find the smallest integer that will satisfy the inequality.

15. Solve: $|3x - 6| = 12$
16. Solve: $|3b + 6| - 9 = 3$
17. Solve: $|3x - 2| < 4$
18. Solve: $|4x - 7| > 9$
19. A machinist must make a bushing that has a tolerance of 0.005 in. The diameter of the bushing is 1.84 in. find the lower limit of the diameter of the bushing.
20. The sum of three consecutive even integers is 66. Find the second integer.
21. A coin purse contains 27 coins in nickels, dimes, and quarters. There are five more dimes than nickels. The total value of the coins is \$3.55. Find the number of quarters in the coin purse.
22. How many ounces of pure silver that costs \$8.50 and ounce must be mixed with 100 oz of a silver alloy that costs \$5.00 and ounce to make an alloy that costs \$6.50 an ounce?
23. Two planes start from the same point and fly in opposite directions. The first plane is flying 30 mph faster than the second plane. In 3.5 h the planes are 875 mi apart. Find the rate of the faster plane.
24. An investment club invested a part of \$9000 in an 8.5% tax-free annual simple interest account and the remainder in an 11% annual simple interest account. The amount of interest earned for one year was \$840. How much was invested in the tax-free account?
25. How many milliliters of pure acid must be added to 50 ml of a 30% acid solution to make a 50% acid solution?

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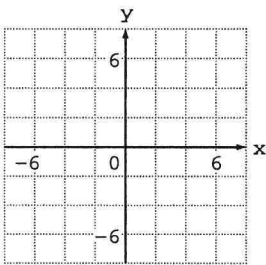
1. Graph the ordered pairs $(3, 4)$ and $(-3, -4)$. Draw a line between the two points.



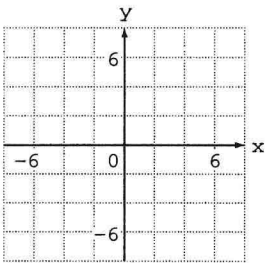
2. Find the ordered-pair solution of $y = -\frac{4}{3}x - 3$ corresponding to $x = -6$.

3. Find the midpoint and length of the line segment with end points $(2, 3)$ and $(4, 6)$.

4. Graph: $y = \frac{2}{3}x - 1$



5. Graph: $2x - 3y = -3$.



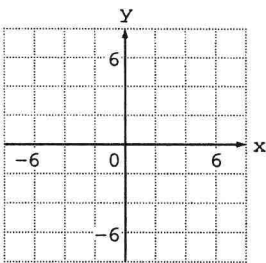
6. Find the slope of a line containing the points $(5, 1)$ and $(-3, 3)$.

7. Given $R(x) = 2x^2 - 3x + 1$, evaluate $R(2)$.

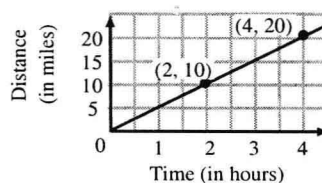
8. Find the x -intercept of the line $3x + 5y = 6$.

9. Find the y -intercept of the line $5x + 3y = -15$.

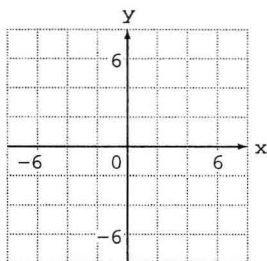
10. Graph the line that passes through $(-2, -3)$ and has slope $-\frac{1}{3}$.



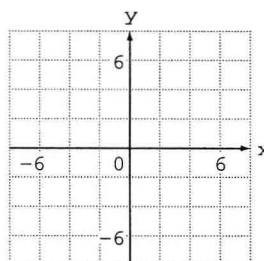
11. What value of x is excluded from the domain of $f(x) = \frac{x+1}{x-5}$?
12. Find the equation of the line that contains the point $(-2, 3)$ and has slope $-\frac{2}{3}$.
13. Find the equation of the vertical line that contains the point $(-2, 3)$.
14. Find the equation of the line containing the points $(1, -2)$ and $(3, -3)$.
15. Find the equation of the horizontal line containing the point $(-2, 6)$.
16. Find the equation of the line that contains the point $(3, 17)$ and is parallel to the line $y = -\frac{2}{3}x - 5$.
17. Find the equation of the line that contains the point $(4, 3)$ and is perpendicular to the line $y = -\frac{2}{5}x + 9$.
18. The graph below shows the relationship between the distance traveled by a cyclist and the time of travel. Find the slope of the line connecting the two points shown on the graph. Write a sentence that states the meaning of the slope.



19. Graph the solution set of $3x - 2y \geq -4$.



20. Graph the solution set of $3x + 2y < -6$.



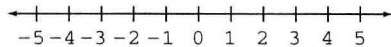
NAME _____

SCORE _____

1. Simplify: $|-5 + 2|$

2. Solve: $x - 5 < -2$ or $2x - 1 > 8$
Write the solution in set-builder notation.

3. Graph: $\{x | -\infty < x < 3\}$



4. Simplify: $\frac{3}{8} - \left(\frac{5}{6} \div \frac{5}{8}\right) + \frac{3}{4}$

5. Evaluate $ac - (2b - a)$ when $a = 5$, $b = -2$, and $c = 3$.

6. Identify the property that justifies the statement:
 $c \cdot \frac{1}{c} = 1$

7. Simplify: $5x - 3(x - 4y) + 4(y - 2x)$

8. Translate and simplify “the difference between five-eighths of a number and seven-sixteenths of that number.”

9. Solve: $\frac{2}{3} + y = \frac{7}{12}$

10. Solve: $10 - 2(3 - x) = 4(2x - 5)$

11. Solve: $4x + 2 \geq 7 - x$
Write the solution in set-builder notation.

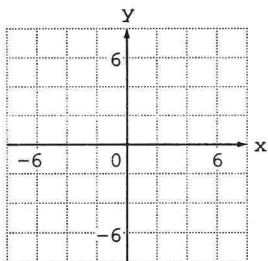
12. Solve: $|5 - x| - 3 = 2$

13. Solve: $|5x - 1| > 4$

14. The sum of two integers is twenty-four. Four times the smaller integer is six more than twice the larger integer. Find the larger integer.

15. A grocer combined walnuts that cost \$4 per kilogram with cashews that cost \$7 per kilogram. How many kilograms of the cashews were used to make an 80 kg mixture costing \$5.05 per kilogram?

17. Graph: $y = -x + 2$



19. Find the y-intercept of $5x + 3y = 2$.

21. Find the equation of the line containing the points $(3, -4)$ and $(-2, 1)$.

23. Given $P(x) = x^2 - 8$, evaluate $P(-3)$.

25. Find the midpoint of the line segment with endpoints $(5, -1)$ and $(8, -3)$.

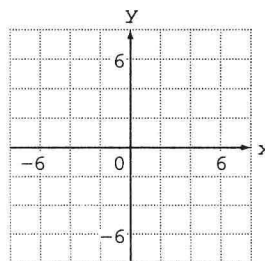
16. An investment of \$4800 is made at an annual simple interest rate of 8.5%. How much additional money must be invested at an annual simple interest rate of 13% so that the total interest earned is 10% of the total investment?

18. Find the slope of the line containing the points $(-4, 2)$ and $(3, -9)$.

20. Find the equation of the line that contains the point $(-4, 0)$ and has a slope of $-\frac{3}{2}$.

22. Find the equation of the line that contains the point $(2, -3)$ and is parallel to the line $y = \frac{5}{2}x - 4$.

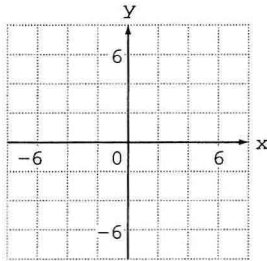
24. Graph the solution set of $3x - 2y > -8$.



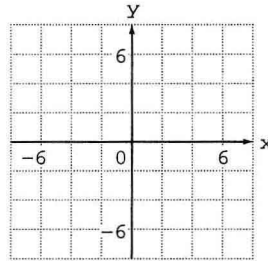
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1. Solve by graphing:
$$\begin{aligned} 2x + y &= 1 \\ x - y &= 2 \end{aligned}$$



2. Solve by graphing:
$$\begin{aligned} 2x + y &= -4 \\ y &= 2 \end{aligned}$$



3. Solve by substitution:
$$\begin{aligned} 4x - 3y &= 7 \\ y &= 4x - 5 \end{aligned}$$

4. Solve by substitution:
$$\begin{aligned} 2x - 3y &= 0 \\ x - 2y &= -1 \end{aligned}$$

5. Solve by the addition method:
$$\begin{aligned} 3x - 2y &= -7 \\ 4x + 3y &= 2 \end{aligned}$$

6. Solve by the addition method:
$$\begin{aligned} 3x + 5y &= -3 \\ 2x - y &= 11 \end{aligned}$$

7. Solve by the addition method:
$$\begin{aligned} x + y - z &= -2 \\ 2x - y &= 3 \\ y - 2x - z &= -5 \end{aligned}$$

8. Solve by the addition method:
$$\begin{aligned} x - 3y + z &= 6 \\ 2x - y - 2z &= -1 \\ x + y + 2z &= 4 \end{aligned}$$

9. Evaluate the determinant:

$$\begin{vmatrix} 5 & 1 \\ 3 & -3 \end{vmatrix}$$

10. Evaluate the determinant:

$$\begin{vmatrix} 2 & 1 & -3 \\ 1 & -1 & 2 \\ -2 & 1 & 1 \end{vmatrix}$$

11. Solve by using Cramer's Rule:

$$\begin{aligned} 2x + y &= -1 \\ -4x - 5y &= 17 \end{aligned}$$

12. Solve by using matrices:

$$\begin{aligned} x - y + 2z &= 7 \\ 2x + 3y - z &= -6 \\ -x + 2y + z &= -3 \end{aligned}$$

13. Flying with the wind, a plane flew 1500 mi in 5 h. Against the wind, the plane required 6 h to fly the same distance. Find the rate of the plane in calm air.

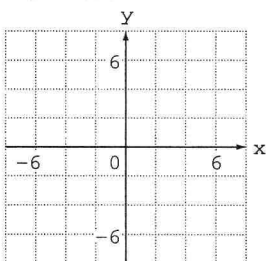
14. A crew rowing with the current traveled 16.5 mi in 1.5 h. Against the current, the crew rowed 12 mi in 1.5 h. Find the rate of the crew in still water.

15. A merchant mixed 50 lb of peanuts with 20 lb of cashews. The 70 lb mixture sells for \$220. A second mixture included 40 lb of peanuts and 10 lb of cashews. The 50 lb mixture sells for \$143. Find the cost per pound of the cashews.

16. A contractor buys 45 yd of nylon carpet and 30 yd of wool carpet for \$1590. A second purchase, at the same prices, includes 20 yd of nylon carpet and 15 yd of wool carpet for \$760. Find the cost per yard of the nylon carpet.

17. Graph the solution set:

$$\begin{aligned} x - 2y &\leq -2 \\ x + 1 &\geq 0 \end{aligned}$$



18. Graph the solution set:

$$\begin{aligned} 4x + 3y &> 0 \\ x &\leq 4 \end{aligned}$$

