

Student: _____
Date: _____

Instructor: Alfredo Alvarez
Course: Algebra Foundations, Martin-Gay, Elayn

Assignment: m041039pract

1. Solve and check the solution.

$$3(4x - 3) = 13x$$

x = _____

2. A stereo normally priced at \$760 is on sale for 45% off. Find the discount and the sale price.

The discount is \$ _____.

The sale price is \$ _____.

3. A company borrows \$68,000 for 2 years at a simple interest rate of 13.5%. Find the interest paid on the loan and the total amount paid.

The interest paid on the loan is \$ _____.

The total amount paid is \$ _____.

4. Solve the equation.

$$-3y - 23 = 6y + 13$$

Select the correct choice below and, if necessary, fill in the answer box to complete your choice.

- A. $y =$ _____ (Type an integer or a simplified fraction.)
 B. The solution is all real numbers.
 C. There is no solution.

5. Solve the equation for x.

$$\frac{3}{10}x - \frac{2}{5} = -1$$

Select the correct choice below and, if necessary, fill in the answer box to complete your choice.

- A. $x =$ _____ (Simplify your answer. Type an integer or a fraction.)
 B. The solution is all real numbers.
 C. There is no solution.

6. Solve the equation.

$$0.20x + 0.45(50) = 34.5$$

Select the correct choice below and, if necessary, fill in the answer box to complete your choice.

- A. $x =$ _____
- B. The solution is all real numbers.
- C. There is no solution.

-
7. Solve the equation for x .

$$7(5x - 2) = 35x - 14$$

Select the correct choice below and, if necessary, fill in the answer box to complete your choice.

- A. $x =$ _____ (Type an integer or a fraction. Simplify your answer.)
- B. The solution is all real numbers.
- C. There is no solution.

-
8. Solve the equation.

$$\frac{x}{6} + 5 = \frac{x}{6}$$

Select the correct choice below and, if necessary, fill in the answer box to complete your choice.

- A. $x =$ _____
- B. The solution is all real numbers.
- C. There is no solution.

-
9. Solve the equation for y .

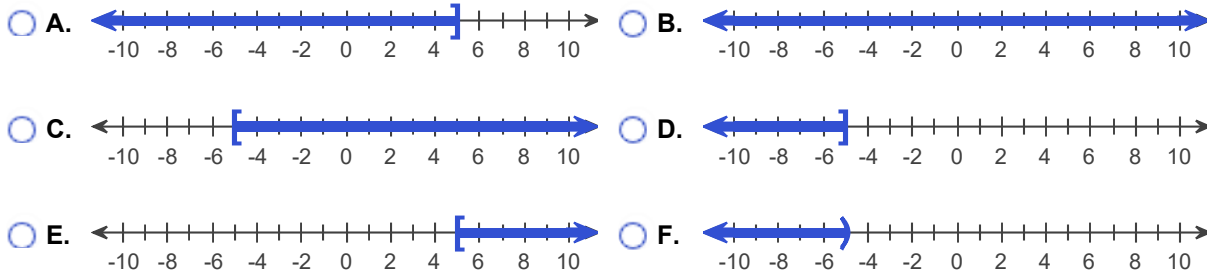
$$8x + y = 10$$

$y =$ _____

10. Solve the inequality. Graph the solution set and write it in interval notation.

$$5x - 5 \leq 6x - 2x$$

Choose the graph of the solution set.

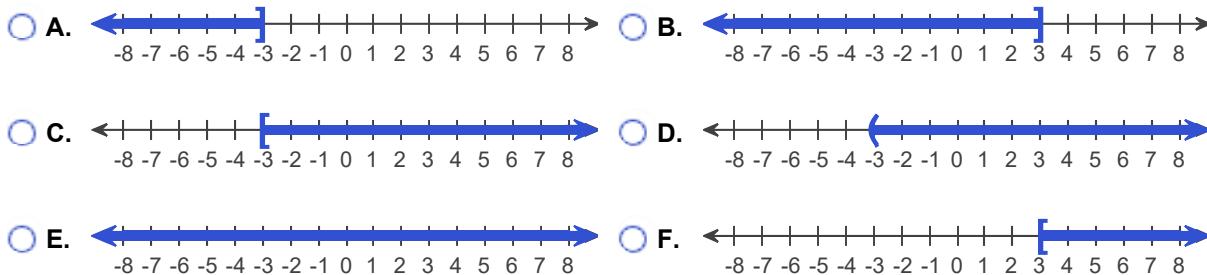


The solution to the inequality $5x - 5 \leq 6x - 2x$ is _____.
(Type your answer in interval notation.)

11. Solve the inequality. Graph the solution set and write it in interval notation.

$$-5x \leq 15$$

Choose the correct graph below.



The solution to the inequality $-5x \leq 15$ is _____.
(Type your answer in interval notation.)

12. Solve the inequality.

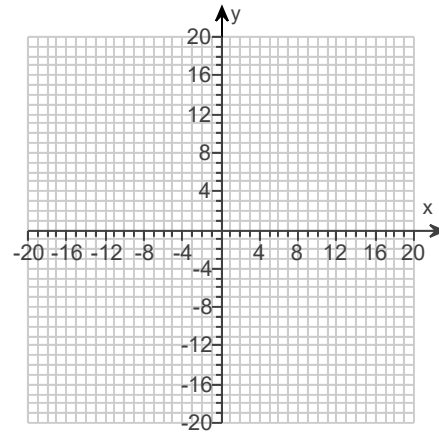
$$-8x + 6 \geq 2(7 - 3x)$$

The solution set is _____. (Type your answer in interval notation.)

13. Graph the equation.

$$y = 2x + 5$$

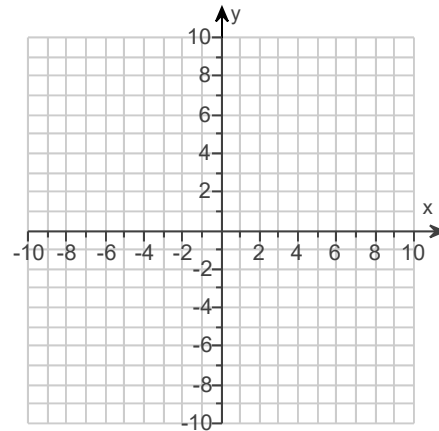
Use the graphing tool to graph the line.



14. Plot the intercepts to graph the equation.

$$5x - 4y = -20$$

Use the graphing tool to graph the equation. Use the intercepts when drawing the line. If only one intercept exists, use it and another point to draw the line.



15. Find the slope of the line that goes through the given points.

$$(-5, 10) \text{ and } (-2, -2)$$

Select the correct choice below and, if necessary, fill in the answer box to complete your choice.

- A. The slope is _____. (Type an integer or a simplified fraction.)
- B. The slope is undefined.

16. Find the slope of the line.

$$6x + y = 8$$

Select the correct choice below and, if necessary, fill in the answer box to complete your choice.

- A. The slope is _____. (Simplify your answer. Type an integer or a fraction.)
- B. The slope is undefined.

17. Determine whether this pair of lines is parallel, perpendicular, or neither.

$$\begin{aligned}5 + 5x &= 6y \\ 6x + 5y &= 8\end{aligned}$$

Choose the correct answer below.

- A. These two lines are perpendicular.
- B. These two lines are neither parallel nor perpendicular.
- C. These two lines are parallel.

18. Find the slope-intercept equation of the line that has the given characteristics.

Slope -8 and y -intercept $(0,8)$

The equation is _____.

(Simplify your answer. Type your answer in slope-intercept form. Use integers or fractions for any numbers in the equation.)

19. Determine whether each ordered pair is a solution of the system of linear equations.

$$\begin{cases} x + y = 7 \\ 3x + 2y = 15 \end{cases}$$

- a. $(3,4)$
b. $(1,6)$

a. Is $(3,4)$ a solution?

- No
 Yes

b. Is $(1,6)$ a solution?

- Yes
 No

20. Solve the system of equations using the substitution method.

$$\begin{cases} x + y = 4 \\ x = 3y \end{cases}$$

Select the correct choice below and, if necessary, fill in the answer box to complete your choice.

- A. The solution of the system is _____. (Type an ordered pair.)
- B. There are infinitely many solutions; $\{(x,y)|x + y = 4\}$ or $\{(x,y)|x = 3y\}$.
- C. There is no solution; $\{\}$ or \emptyset .

21. Solve the system of equations by the addition method.

$$\begin{cases} x + 2y = -2 \\ 3x + 3y = -12 \end{cases}$$

Select the correct choice below and, if necessary, fill in the answer box within your choice.

- A. The solution is _____. (Simplify your answer. Type an ordered pair.)
- B. There are infinitely many solutions; $\{(x,y)|x + 2y = -2\}$ or $\{(x,y)|3x + 3y = -12\}$.
- C. There is no solution; $\{\}$ or \emptyset .

22. Solve the system of equations by the addition method.

$$\begin{cases} 2x + 3y = 6 \\ 6x + 9y = 0 \end{cases}$$

Select the correct choice below and, if necessary, fill in the answer box to complete your choice.

- A. The solution is _____.
(Simplify your answer. Type an ordered pair.)
- B. There are infinitely many solutions; $\{(x,y)|2x + 3y = 6\}$ or $\{(x,y)|6x + 9y = 0\}$.
- C. There is no solution; $\{\}$ or \emptyset .

23. Solve the system of equations by the addition method.

$$\begin{cases} -3x + y = 9 \\ 6x - 2y = -18 \end{cases}$$

Select the correct choice below and, if necessary, fill in the answer box to complete your choice.

- A. The solution is _____. (Simplify your answer. Type an ordered pair.)
- B. There are infinitely many solutions; $\{(x,y)|-3x + y = 9\}$ or $\{(x,y)|6x - 2y = -18\}$.
- C. There is no solution; $\{\}$ or \emptyset .

24. Use the power rule, the power of a product rule, and the power of a quotient rule to simplify the expression.

$$\left(\frac{9x^5z^5}{y^5}\right)^3$$

$$\left(\frac{9x^5z^5}{y^5}\right)^3 = \underline{\hspace{2cm}}$$

25. Simplify the expression. Assume that all bases are not equal to 0.

$$\frac{8x^3y^2z}{xyz}$$

$$\frac{8x^3y^2z}{xyz} = \underline{\hspace{2cm}}$$

26. If $P(x) = x^2 + x + 1$, find $P(7)$.

$$P(7) = \underline{\hspace{2cm}}$$

27. Subtract.

$$(8y^2 + 9y - 7) - (-2y + 5)$$

$$(8y^2 + 9y - 7) - (-2y + 5) = \underline{\hspace{2cm}} \text{ (Simplify your answer.)}$$

28. Multiply vertically.

$$(6x + 1)(2x^2 + 2x - 1)$$

$$(6x + 1)(2x^2 + 2x - 1) = \underline{\hspace{2cm}} \text{ (Simplify your answer.)}$$

29. Multiply.

$$(3x + 7)(5x + 2)$$

$$(3x + 7)(5x + 2) = \underline{\hspace{2cm}} \text{ (Simplify your answer.)}$$

30. Multiply.

$$(2x - 9)^2$$

$$(2x - 9)^2 = \underline{\hspace{2cm}} \text{ (Simplify your answer.)}$$

31. Simplify the expression. Write the result using positive exponents only.

$$\left(\frac{x^{-1}y^2}{x^4y^5} \right)^3$$

$$\left(\frac{x^{-1}y^2}{x^4y^5} \right)^3 = \underline{\hspace{2cm}}$$

(Simplify your answer. Use positive exponents only.)

32. Perform the division.

$$\frac{18x^7 + 3x^4}{x}$$

$$\frac{18x^7 + 3x^4}{x} = \underline{\hspace{2cm}} \text{ (Simplify your answer.)}$$

33. Find the quotient using long division.

$$\frac{2x^2 + 9x + 10}{x + 2}$$

$$\frac{2x^2 + 9x + 10}{x + 2} = \underline{\hspace{2cm}} \text{ (Simplify your answer.)}$$

34. Find the quotient using long division.

$$\frac{6x^2 - 9x + 3}{x - 2}$$

$$\frac{6x^2 - 9x + 3}{x - 2} = \underline{\hspace{2cm}} \text{ (Simplify your answer.)}$$

35. Factor the trinomial completely.

$$x^2 - 4x - 32$$

Select the correct choice below and, if necessary, fill in the answer box to complete your choice.

- A. $x^2 - 4x - 32 = \underline{\hspace{2cm}}$ (Type your answer in factored form.)
- B. The polynomial is prime.
-

36. Factor the following binomial completely.

$$64x^2 - 81y^2$$

Select the correct choice below and, if necessary, fill in the answer box to complete your choice.

- A. $64x^2 - 81y^2 = \underline{\hspace{2cm}}$ (Factor completely.)
- B. The polynomial is prime.
-

37. Solve the equation.

$$(x - 8)(x + 6) = 0$$

$x = \underline{\hspace{2cm}}$
 (Simplify your answer. Type each solution only once. Use a comma to separate answers as needed.)

38. Solve the equation.

$$4x(x - 1) = 0$$

$x = \underline{\hspace{2cm}}$ (Use a comma to separate answers as needed.)

39. Solve.

$$x^2 + 2x - 15 = 0$$

x = _____

(Simplify your answer. Type each solution only once. Use a comma to separate answers as needed.)

1. -9

2. 342.00

418.00

3. $18,360$

$86,360$

4. A. $y = -4$ (Type an integer or a simplified fraction.)

5. A. $x = -2$ (Simplify your answer. Type an integer or a fraction.)

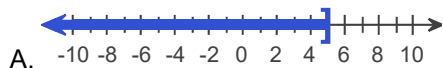
6. A. $x = 60$

7. B. The solution is all real numbers.

8. C. There is no solution.

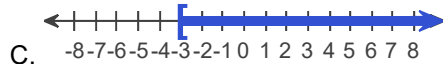
9. $10 - 8x$

10.

A. $-10 -8 -6 -4 -2 0 2 4 6 8 10$

$(-\infty, 5]$

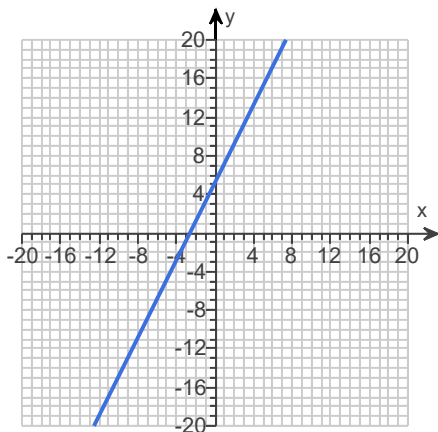
11.

C. $-8 -7 -6 -5 -4 -3 -2 -1 0 1 2 3 4 5 6 7 8$

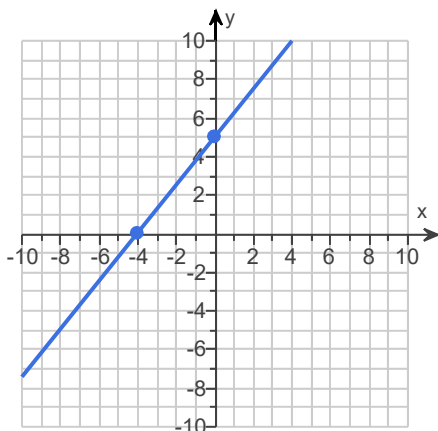
$[-3, \infty)$

12. $(-\infty, -4]$

13.



14.



15. A. The slope is -4 . (Type an integer or a simplified fraction.)

16. A. The slope is -6 . (Simplify your answer. Type an integer or a fraction.)

17. A. These two lines are perpendicular.

18. $y = -8x + 8$

19. No

Yes

20. A. The solution of the system is (3,1) . (Type an ordered pair.)

21. A. The solution is (-6,2) . (Simplify your answer. Type an ordered pair.)

22. C. There is no solution; $\{\}$ or \emptyset .

23. B. There are infinitely many solutions; $\{(x,y) \mid -3x + y = 9\}$ or $\{(x,y) \mid 6x - 2y = -18\}$.

24. $\frac{729x^{15}z^{15}}{y^{15}}$

25. $8x^2y$

26. 57

27. $8y^2 + 11y - 12$

28. $12x^3 + 14x^2 - 4x - 1$

29. $15x^2 + 41x + 14$

30. $4x^2 - 36x + 81$

31. $\frac{1}{x^{15}y^9}$

32. $18x^6 + 3x^3$

33. $2x + 5$

34. $6x + 3 + \frac{9}{x-2}$

35. A. $x^2 - 4x - 32 = \underline{(x + 4)(x - 8)}$ (Type your answer in factored form.)

36. A. $64x^2 - 81y^2 = \underline{(8x + 9y)(8x - 9y)}$ (Factor completely.)

37. 8, -6

38. 1, 0

39. -5,3
