Student: _____ **Instructor:** Alfredo Alvarez **Assignment:** Math 0410 Homework37ez
Date: _____ **Course:** Math 0410 Spring 2018

1. Simplify.

$(-17-31)\div 16-23$

$(-17-31)\div 16-23 =$ ☐

2. Solve the equation.

$4(y-2)=y-8$

$y =$ ☐

3. Solve the equation.

$5(4x-2)=21x$

$x =$ ☐

4. Subtract.

$$\frac{1}{4}-\frac{5}{18}$$

$\frac{1}{4}-\frac{5}{18} =$ ☐ (Type an integer or a fraction.)

5. Solve the equation.

$$\frac{z}{5}=\frac{z}{4}+9$$

$z =$ ☐ (Type an integer or a fraction. Simplify your answer.)

6. Solve.

$4.9x-68=2.9x+2$

$x =$ ☐ (Type an integer or a decimal.)

7. A stereo normally priced at $509 is on sale for 30% off. Find the discount and the sale price.

The discount is $☐.

The sale price is $☐.

8. A company borrows $79,000 for 2 years at a simple interest rate of 7.5%. Find the interest paid on the loan and the total amount paid.

The interest paid on the loan is $☐.

The total amount paid is $☐.

9. Solve the equation for x.

$7(x-9)-3=-66$

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.

10. Solve the equation for x.

$2(6x+5)=12x+10$

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.

11. Solve the equation for y.

$9x+y=6$

y = [ ]

12. Solve the inequality.

$-8x+4 \geq 4(4-x)$

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

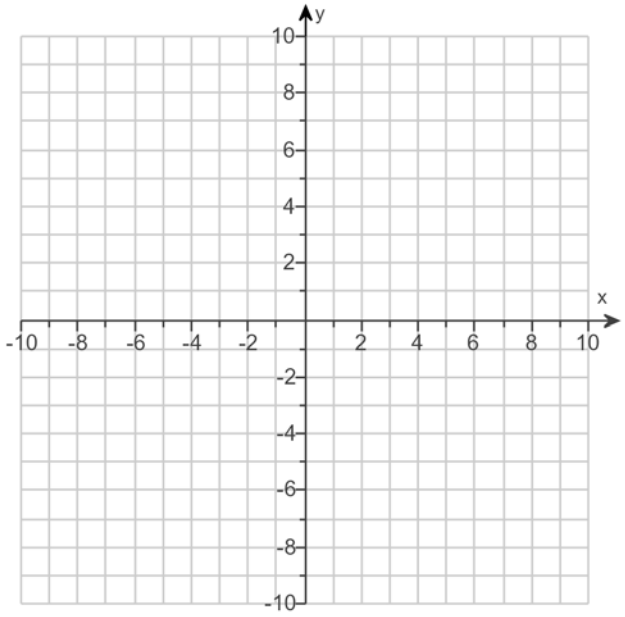
13. For the following equation, find three ordered pair solutions by completing the table. Then use the ordered pairs to graph the equation.

$y=-3x+3$

Find three ordered pair solutions of the given equation.

x	y
0	
1	
2	

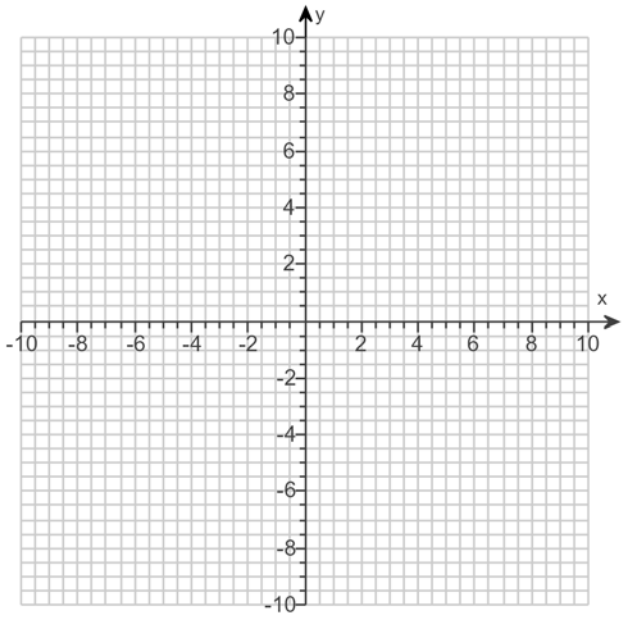
Use the graphing tool to graph the line.



14. Graph the linear equation.

$$y = -\frac{1}{2}x + 1$$

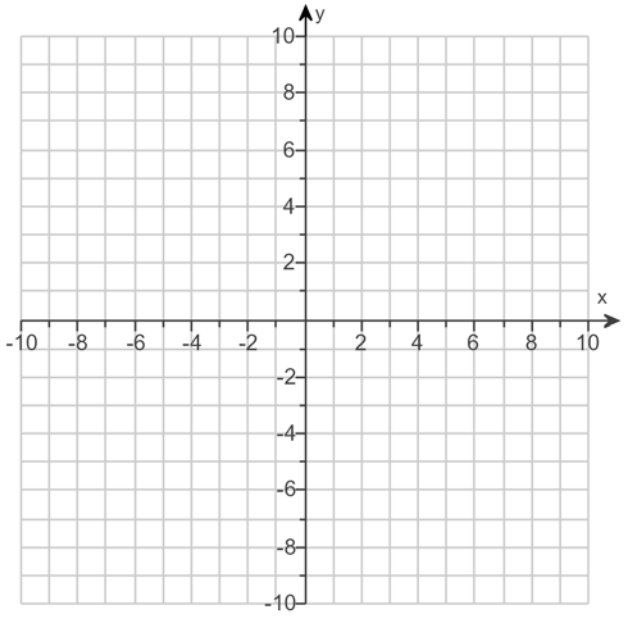
Use the graphing tool to graph the linear equation.



15. Plot the intercepts to graph the equation.

$$6x - 3y = -6$$

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.



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

$(-2, -6)$ and $(-7, -2)$

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

- **A.** The slope is _____. (Simplify your answer.)
- **B.** The slope is undefined.

17. Find the slope of the line.

$7x + y = 3$

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.

18. Find the slope of the line.

$2x - 3y = 6$

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

- **A.** The slope of the line is _____. (Simplify your answer.)
- **B.** The slope of the line is undefined.

19. Determine whether the pair of lines are parallel, perpendicular, or neither.

$y = \frac{3}{5}x + 8$

$y = -\frac{3}{5}x$

Choose the correct answer below.

- **A.** Neither
- **B.** Parallel
- **C.** Perpendicular

20. Find the slope-intercept form of the line whose slope is 4 and that passes through the point $(-7,11)$.

The equation of the line is ☐.
(Type your answer in slope-intercept form.)

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

Slope -6 and y-intercept $(0,7)$

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

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

$$\begin{cases} 2x - y = 1 \\ x + 3y = 18 \end{cases}$$

a. (3,5)
b. (5,9)

a. Is (3,5) a solution?

- Yes
- No

b. Is (5,9) a solution?

- No
- Yes

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

$$\begin{cases} 6x + y = 32 \\ 2x - y = 8 \end{cases}$$

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; $\{(x,y) \mid 6x + y = 32\}$ or $\{(x,y) \mid 2x - y = 8\}$.
- **C.** There is no solution; {} or ∅.

24. If $P(x) = x^2 + x + 4$, find P(7).

$P(7) =$ ☐

25. Subtract.

$(5y^2 + 5y - 3) - (-9y + 2)$

$(5y^2 + 5y - 3) - (-9y + 2) =$ ☐ (Simplify your answer.)

26. Add.

$(-6y^2 - 8y) + (3y^2 + y - 1)$

$(-6y^2 - 8y) + (3y^2 + y - 1) =$ ☐ (Do not factor.)

27. Find the following product.

$(3y - 6)^2$

$(3y - 6)^2 =$ ☐

28. Multiply.

$(5x-8)(3x-7)$

$(5x-8)(3x-7) =$ ☐ (Simplify your answer.)

29. Multiply.

$(x+2)\left(x^3-4x+5\right)$

$(x+2)\left(x^3-4x+5\right) =$ ☐

30. Find the following product.

$(7a+4)\left(4a^2-6a-9\right)$

$(7a+4)\left(4a^2-6a-9\right) =$ ☐

31. Multiply.

$(7p+q)(7p-q)$

$(7p+q)(7p-q) =$ ☐ (Simplify your answer.)

32. Find the product.

$(10x-3)(2x+7)$

$(10x-3)(2x+7) =$ ☐

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

$$\left(\frac{x^{-3}y^5}{x^4y^7}\right)^3$$

$\left(\frac{x^{-3}y^5}{x^4y^7}\right)^3 =$ ☐

(Simplify your answer. Use positive exponents only.)

34. Simplify the following expression. Write the result using positive exponents.

$$\frac{\left(-3xy^{-2}\right)^{-3}}{\left(xy^{-2}\right)^{-1}}$$

$\frac{\left(-3xy^{-2}\right)^{-3}}{\left(xy^{-2}\right)^{-1}} =$ ☐

(Simplify your answer. Use integers or fractions for any numbers in the expression.)

35. Divide using synthetic division.

$(7x^2 + 11x + 11) \div (x + 1)$

$(7x^2 + 11x + 11) \div (x + 1) =$ ☐

36. Factor the following binomial completely.

$49x^2 - 36y^2$

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

- ○ **A.** $49x^2 - 36y^2 =$ ☐ (Factor completely.)
- ○ **B.** The polynomial is prime.

37. Solve the equation.

$x^2 - 12x + 27 = 0$

$x =$ ☐

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

1. -26

2. 0

3. -10

4. $-\frac{1}{36}$

5. -180

6. 35

7. 152.70

   356.30

8. 11,850

   90,850

9. A. x = **0** (Simplify your answer. Type an integer or a fraction.)

10. B. The solution is all real numbers.

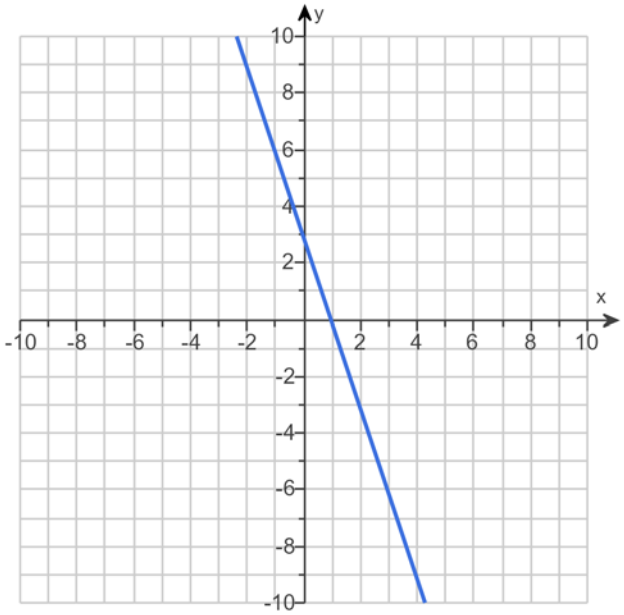
11. $6-9x$

12. $(-\infty, -3]$

13. 3

0

− 3


y
x
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10

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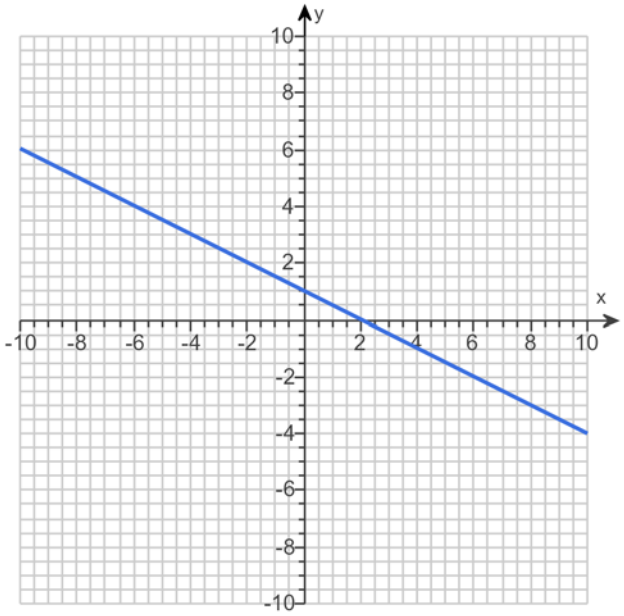
y
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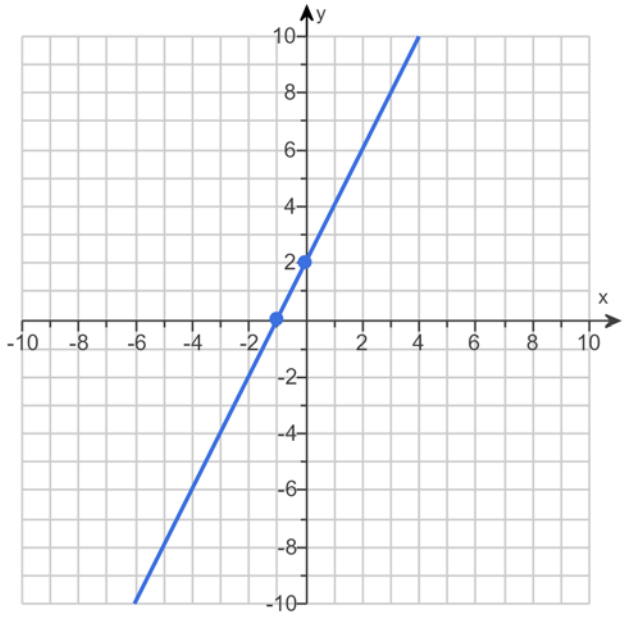

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16. A. The slope is $-\frac{4}{5}$. (Simplify your answer.)

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17. A. The slope is -7.(Simplify your answer. Type an integer or a fraction.)

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18. A. The slope of the line is $\frac{2}{3}$. (Simplify your answer.)

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19. A. Neither

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20. $y = 4x + 39$

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21. $y = -6x + 7$

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22. Yes

No

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23. A. The solution is (5,2). (Simplify your answer. Type an ordered pair.)

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24. 60

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25. $5y^2 + 14y - 5$

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26. $-3y^2 - 7y - 1$

27. $9y^2 - 36y + 36$

28. $15x^2 - 59x + 56$

29. $x^4 + 2x^3 - 4x^2 - 3x + 10$

30. $28a^3 - 26a^2 - 87a - 36$

31. $49p^2 - q^2$

32. $20x^2 + 64x - 21$

33. $\dfrac{1}{x^{21}y^6}$

34. $-\dfrac{y^4}{27x^2}$

35. $7x + 4 + \dfrac{7}{x+1}$

36. A. $49x^2 - 36y^2 =$ $\boxed{\textbf{(7x + 6y)(7x - 6y)}}$ (Factor completely.)

37. 9,3