Name: _____ **Class:** _____ **Date:** _____ **ID: A**

Geometry Summer Math Assignment - SHOW ALL WORK

1. A rectangle has a length of $x - 8$ and a width of $x - 9$. Which equation below describes the perimeter, P, of the rectangle in terms of x?
   a. $P = x^2 - 17x + 72$
   b. $P = x - 17$
   c. $P = 2x - 17$
   d. $P = 4x - 34$

2. On January 1, Mario had a savings account balance of $2742 and by April 1, his balance had increased to $3597. Find Mario's average savings rate in dollars per month for that period.
   a.$275 per month b.$300 per month
   c.$285 per month d.$250 per month

3. The cost of a school banquet is $85 plus $14 for each person attending. Write an equation that gives total cost as a function of the number of people attending. What is the cost for 45 people?
   a. $y = 85x + 14$; $3839
   b. $y = 14x - 85$; $545
   c. $y = 85x - 14$; $3811
   d. $y = 14x + 85$; $715

4. Patty pays $235 in advance on her account at the athletic club. Each time she uses the club, $6 is deducted from the account. Write an equation that represents the value remaining in her account after x visits to the club. Find the value remaining in the account after 5 visits.
   a. $V = 235 - 6x$; $1415
   b. $V = 6 - 235x$; $205
   c. $V = 235 - 6x$; $1401
   d. $V = 235 - 6x$; $205

5. Write an equation, in slope-intercept form, that passes through point $(-6, 5)$ with slope 2.
   a. $y = 2x + 17$
   b. $y = 2x - 7$
   c. $y = -2x - 7$
   d. $y = -2x + 17$

6. Write an equation of the line containing the points $(1, -8)$ and $(-16, 43)$.
   a. $y = -x + 13$
   b. $y = x + 13$
   c. $y = 3x + 26$
   d. $y = -3x - 5$

Solve the equation.

7. $7x - 29 - 21x = 3 - (12 + 2x)$.
   a. 3
   b. 5
   c. $-\frac{5}{3}$
   d. $\frac{5}{3}$

8. Find the slope and y-intercept of the line with the equation $4x + 2y = 32$.
   a. $m = -16, b = 2$
   b. $m = 2, b = -16$
   c. $m = -2, b = 16$
   d. $m = 16, b = -2$

9. The formula for the resistance of a conductor with voltage V and current I is $r = \frac{V}{I}$. Solve for V.
   a. $I = Vr$
   b. $V = \frac{r}{I}$
   c. $V = \frac{I}{r}$
   d. $V = Ir$

10. Solve $4x - z = y$ for x.
    a. $x = \frac{y + z}{4}$
    b. $x = \frac{y - z}{4}$
    c. $x = y + z - 4$
    d. $x = \frac{y}{4} + z$

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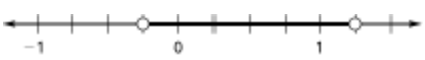
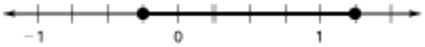
11. $|4x - 2| < 3$

a. $-\frac{1}{4} < x < \frac{5}{4}$



b. $x \leq -\frac{1}{4}$ or $x \geq \frac{5}{4}$

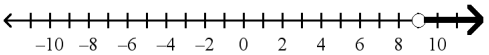
c. $-\frac{1}{4} \leq x \leq \frac{5}{4}$



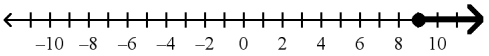
d. $x < -\frac{1}{4}$ or $x > \frac{5}{4}$

12. $-2(4n - 2) \geq -68$

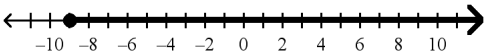
a. $n > 9$



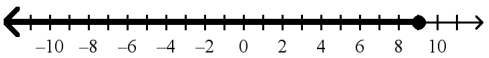
b. $n \geq 9$



c. $n \geq -9$



d. $n \leq 9$



13. $|x-1|>4$ is equivalent to which of the following?

    a. $-3<x<5$
    b. $x>5$
    c. $x>5$ or $x<-3$
    d. $x<5$

14. Solve by substitution:

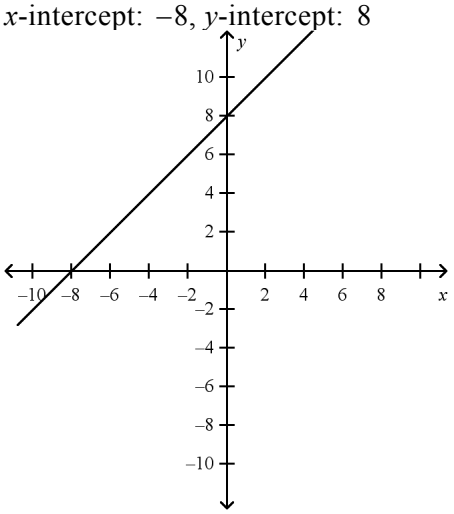
    $2x+3y=3$

    $y=5x+1$

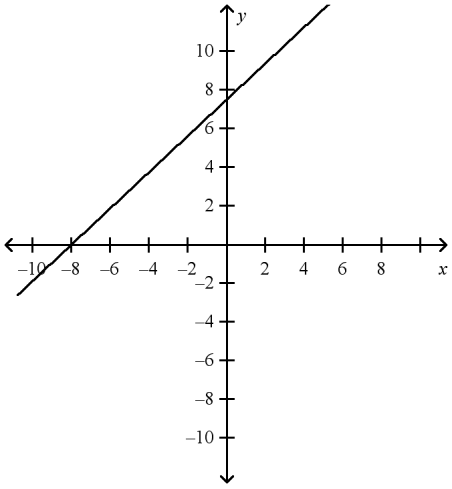
    a. $(2, -\frac{1}{3})$
    b. $(2, 11)$
    c. $(0, 1)$
    d. no solution

15. The length of a rectangle is 8 cm more than four times the width. If the perimeter of the rectangle is 46 cm, what are the dimensions?
    a. width = 3 cm, length = 20 cm
    b. width = 3 cm, length = 40 cm
    c. width = 6 cm, length = 32 cm
    d. width = 6 cm, length = 40 cm

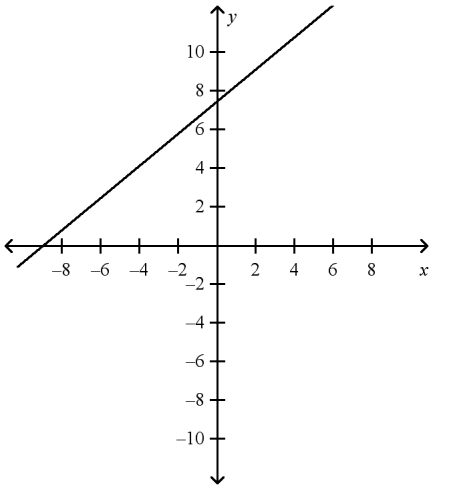
16. Use intercepts to graph the line described by the equation $2x-2y=-16$.
    a. x-intercept: -8, y-intercept: 8



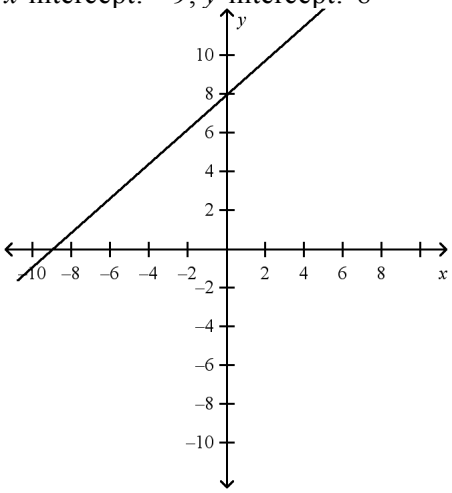
    b. x-intercept: -8, y-intercept: $\frac{15}{2}$



    c. x-intercept: -9, y-intercept: $\frac{15}{2}$



    d. x-intercept: -9, y-intercept: 8



Factor the polynomial.

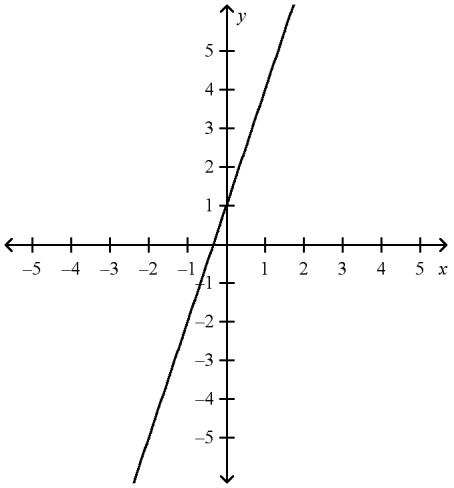
17. $x^2 + 7x + 12$
    a. $(x + 4)(x - 3)$
    b. $(x - 4)(x + 3)$
    c. $(x - 4)(x - 3)$
    d. $(x + 4)(x + 3)$

Factor the trinomial.

18. $x^2 - 3x - 10$

19. Graph the line with the slope $\frac{1}{3}$ and y-intercept 1.

a.



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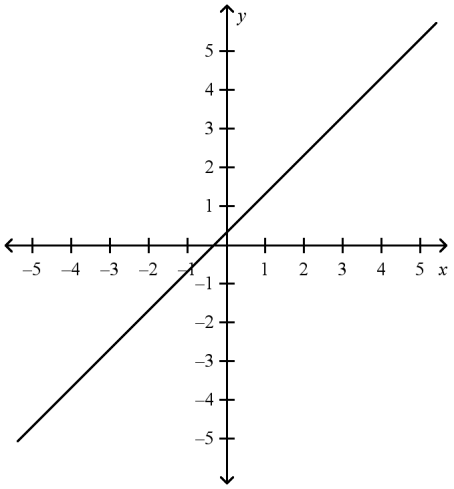
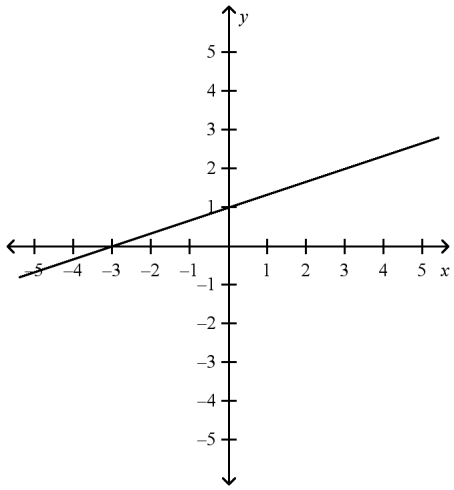
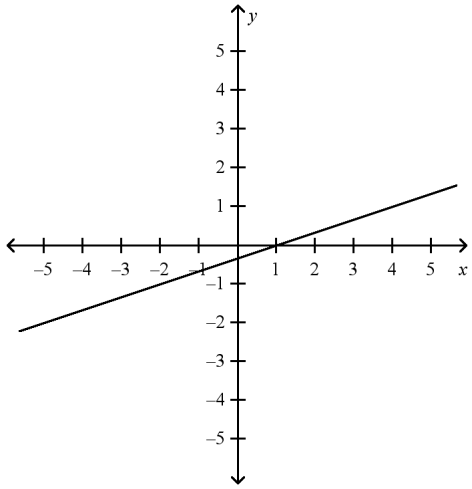


c.



d.



20. Write the equation that describes the line in slope-intercept form.
    slope = 4, point (3, –2) is on the line
    a. $y = 4x + 14$
    b. $y = 4x - 14$
    c. $y = 4x + 10$
    d. $y = 4x - 2$

21. Write an equation in point-slope form for the line that has a slope of $\frac{2}{9}$ and contains the point (9, –6).
    a. $y - 6 = \frac{2}{9}(x + 9)$
    b. $y + 6 = \frac{2}{9}(x - 9)$
    c. $x - 9 = \frac{2}{9}(y + 6)$
    d. $y + 9 = \frac{2}{9}(x - 6)$

22. Molly scored a total of 37 points in the basketball game, and she scored n points in the second half of the game. Write an expression to determine the number of points she scored in the first half of the game. Then, find the number of points she scored in the first half of the game if she scored 18 points in the second half of the game.
    a. $37 - n$; 19 points
    b. $37n$; 55 points
    c. $37 + n$; 55 points
    d. $\frac{37}{n}$; 19 points

23. The range of a set of scores is 21, and the lowest score is 39. Write and solve an equation to find the highest score. (*Hint*: In a data set, the range is the difference between the highest and the lowest values.)
    a. $h + 39 = 21$
       The highest score is -18.
    b. $h - 39 = 21$
       The highest score is 60.
    c. $h + 21 = 39$
       The highest score is 18.
    d. $h - 39 = 2 \cdot 21$
       The highest score is 81.

24. If $3x = 21$, find the value of $23 - 4x$.
    a. -5
    b. -2
    c. 2
    d. 5

25. Devon pays \$34.95 for her gym membership. After that she pays \$7.95 for each visit to the gym. What is the greatest number of visits she can afford if the total amount she spends cannot be more than \$154.20?
    a. 4
    b. 15
    c. 119
    d. 19

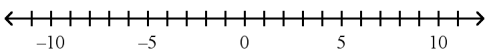
26. Solve $50q - 43 = 52q - 81$.
    a. $q = 38$
    b. $q = -19$
    c. $q = -38$
    d. $q = 19$

27. Solve $-8m + 7 - m = -1 - 9m + 8$. Tell whether the equation has infinitely many solutions or no solutions.
    a. Infinitely many solutions
    b. Two solutions
    c. No solutions
    d. Only one solution

28. A professional cyclist is training for the Tour de France. What was his average speed in miles per hour if he rode the 120 miles from Laval to Blois in 4.1 hours? Use the formula $d = rt$, and round your answer to the nearest tenth.
    a. 29.3 mph
    b. 72.6 mph
    c. 492.0 mph
    d. 115.9 mph

Solve the inequality.

29. $4x - 3 \leq 3(x - 1)$. Graph your solution.



30. Solve the system.
$2x - 6y = -18$
$3x + 7y = 37$

31. Simplify 2^{-3}.
a. 8
b. $\frac{1}{8}$
c. -6
d. $-\frac{1}{8}$

32. Simplify $\frac{-9x^0y^{-3}}{z^{-9}}$.
a. $\frac{-9}{y^3z^9}$
b. $-9xy^3z^9$
c. $\frac{-9y^3}{z^9}$
d. $\frac{-9z^9}{y^3}$

33. Write the polynomial $3x^2 - 8x - 12x^5 - 5x^3 + 2x^4 - 6$ in standard form. Then give the leading coefficient.
a. $-6 - 8x + 3x^2 + 2x^3 - 5x^4 - 12x^5$
The leading coefficient is -6.
b. $-6 - 8x + 3x^2 - 5x^3 + 2x^4 - 12x^5$
The leading coefficient is -6.
c. $-12x^5 + 2x^4 + 3x^3 - 5x^2 - 8x - 6$
The leading coefficient is -12.
d. $-12x^5 + 2x^4 - 5x^3 + 3x^2 - 8x - 6$
The leading coefficient is -12.

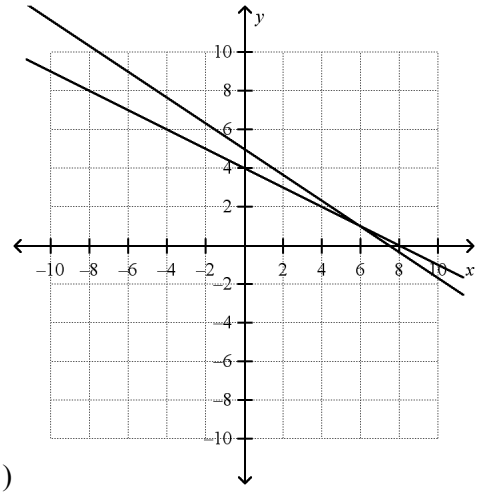
34. The legs of an isosceles triangle measure $2x^4 + 2x - 1$ units. The perimeter of the triangle is $5x^4 - 2x^3 + x - 3$ units. Write a polynomial that represents the measure of the base of the triangle
a. $3x^4 - 2x^3 - x - 2$
b. $x^4 - 2x^3 - 3x - 1$
c. $x^4 - 2x^3 + 3x + 1$
d. $7x^4 - 2x^3 - x - 2$

35. Multiply.
$(\frac{1}{9}x^3r^2)(r^4s^4)(18x^3s^4)$
a. $18\frac{1}{9}x^9r^8s^{16}$
b. $18\frac{1}{9}x^6r^6s^8$
c. $2x^9r^8s^{16}$
d. $2x^6r^6s^8$

36. Multiply.
$9x^4y^5\left(-5x^3y^3 - 3y^3\right)$
a. $4x^7y^8 + 6x^4y^8$
b. $-45x^{12}y^{15} - 27y^{15}$
c. $9x^8y^9 + 9x^5y^9$
d. $-45x^7y^8 - 27x^4y^8$

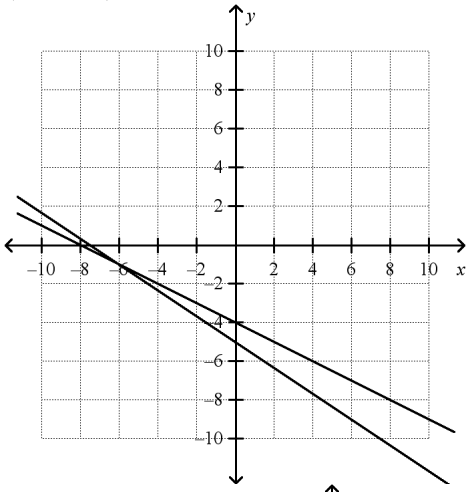
37. Multiply.
$(y - 4)(y - 4)$
a. $y^2 - 8y + 16$
b. $y^2 + 16$
c. $y^2 - 4y + 16$
d. $y(y - 4) - 4(y - 4)$

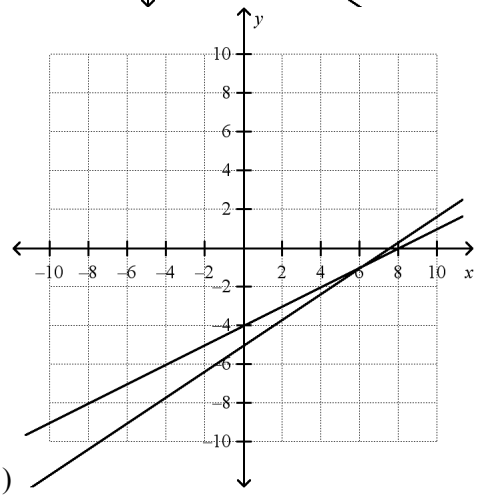
38. Solve the system $\begin{cases} 2x + 3y = -15 \\ 2x + 4y = -16 \end{cases}$ by graphing.



a. (6, 1)

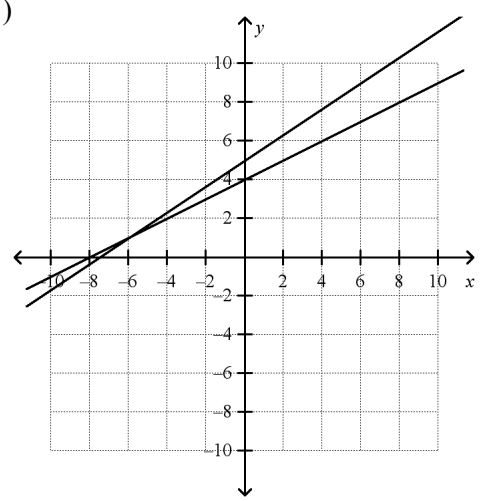
b. (−6, − 1)





c. (6, − 1)

d. (−6, 1)



39. Solve $\begin{cases} 3x + y = 4 \\ -7x - y = -16 \end{cases}$ by elimination. Express your answer as an ordered pair.

a. (−5, 3)
b. (5, −11)
c. (3, −5)
d. (7, −17)

40. Solve $\begin{cases} y = -4x + 4 \\ -4x - y + 4 = 0 \end{cases}$.

a. (5, −16) and (0, 0)
b. This system has infinitely many solutions.
c. This system has no solution.
d. This system has exactly one solution.