Name _____

Algebra I 1st Semester Practice Final

1. Evaluate $5+12\div3-6$

5+4-6
9-6
3

PEMDAS

2. Evaluate $5(4+2\bullet7)\div(3\bullet13-9)$

5(4+14)÷(39-9)
5(18)÷(30)
3

3. Write an algebraic expression for 9 less than y.

y - 9

4. Write an algebraic expression for the sum of the square of a number and 7.

x^2+7

5. Evaluate $8xy-y^2$ if x = ½ and y = 3

$8(\frac{1}{2})(3)-(3^2)$
12 - 9
3

6. Write the simplest form of 7y +8 – 2y

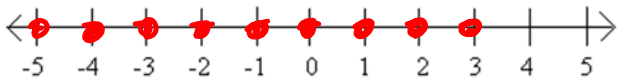
5y + 8

7. Write the simplest form of $10x^2+7x+3x^2-9x$

$13x^2-2x$

8. On the number line graph all integers less than 4

$n < 4$



9. Write $5 \bullet 5 \bullet 5 \bullet x \bullet x \bullet y \bullet y \bullet y$ using exponents

$5^3x^2y^3$ or $125x^2y^3$

10. Subtract $-5-(-12)$

$-5+12$ (7)

11. What is the solution of $7+x=-21$

$-7 \quad -7$

$x=-28$

12. What is the solution of $7-x=-30$

$-7 \quad -7$

$-x=-37$ $x=37$

13. What is the value of -212 + 310?

98

14. What is the value of $-28+|-21|$?

$-28+21$

-7

15. Find the value of $-|x+9|$ if x = -15

$-|-15+9|$

$-|-6|$

-6

16. Let x represent the increase in attendance at the Snowflake Classic this year. If last year the total attendance at the Snowflake Classic was 482 and this year the total attendance was 635, write an equation to show the increase in attendance and solve.

$482 + x = 635$
$-482 \quad -482$
$x = 153$

17. The sum of two integers is -20, The greater is 8. What is the lesser integer?

$x + y = -20$ $x + 8 = -20$
$-8 \quad -8$
$x = -28$

18. Evaluate 4(-5) + (-6)(-2)

$-20 + 12$ -8

19. Simplify $8x - 4x^2 - 2x$

$6x - 4x^2$ or $-4x^2 + 6x$

20. Simplify $\frac{42x-21}{-7}$ rewrite $\frac{42x}{-7} - \frac{21}{-7}$ $-6x + 3$

21. Simplify $\frac{\frac{-5}{3}}{7}$

Complex fraction $\frac{-5}{1} \div \frac{3}{7}$
$\frac{-5}{1} \cdot \frac{7}{3}$ $\frac{-35}{3}$

22. What is the solution of $\frac{(2x-7)}{3} = \frac{-5}{1}$

Cross multiply $-15 = 2x - 7$
$+7 \quad +7$
$\frac{-8}{2} = \frac{2x}{2}$
$-4 = x$

23. What is the solution of $\frac{-5}{7}x = -25$

rewrite $\frac{-5x}{7} = \frac{-25}{1}$

$\frac{-5x}{-5} = \frac{-175}{-5}$

$x = 35$

24. What is the solution of $-2(y-7) = 6(2y+1)$

$-2y + 14 = 12y + 6$

$+2y \quad -6 \quad 2y \quad +6$

$\frac{8}{14} = \frac{14y}{14}$

$\frac{4}{7} = y$

25. What is the solution of $x - \frac{2}{3} = \frac{3}{4}x$

$12\left(x - \frac{2}{3} = \frac{3}{4}x\right)$

$12x - 8 = 9x$

$-9x + 8 \quad -9x + 8$

$3x = 8$

$x = 8/3$

26. What is the solution of $2(3x-5) - x + 5 = 5(x-1)$

all real #s

$6x - 10 - x + 5 = 5x - 5$

$5x - 5 = 5x - 5$

$-5x + 5 \quad -5x + 5$

$0 = 0$

27. What is the solution of $12 - 4x = -28$

$-12 \quad -12$

$\frac{-4x}{-4} = \frac{-40}{-4}$

$x = 10$

28. 25 is 20% of what number?

$\frac{25}{.20} = \frac{.20n}{.20}$

$n = 125$

29. Solve the proportion $\frac{5}{3} \times \frac{(x+1)}{(x-1)}$

$5(x-1) = 3(x+1)$

$5x - 5 = 3x + 3$

$-3x + 5 \quad -3x + 5$

$2x = 8$

$\frac{2x}{2} = \frac{8}{2}$

$x = 4$

Consistent!

30. Jim traveled 72 miles in 2 hours. At the same rate, find the number of hours it will take him to travel 162 miles?

$\frac{M}{h}$

$\frac{72}{2} = \frac{162}{h}$

$72h = 324$

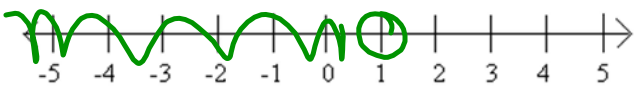
$h = \frac{324}{72}$

$h = 4.5$

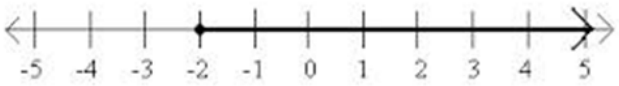
31. Solve and graph $n - 8 < -7$

$+8 \quad +8$

$n < 1$



32. Write the inequality for the graph below.



$x \geq -2$

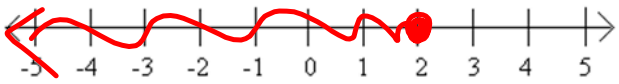
33. Solve and graph $3d-2(8d-9)\geq 3-(2d+7)$

$3d-16d+18 \geq 3-2d-7$

$-13d+18 \geq -2d-4$

$-11d \geq -22$

$d \leq 2$

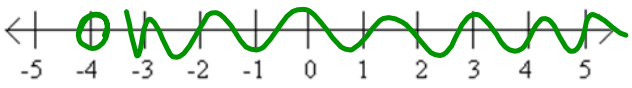


34. Solve and graph $-7x+21<49$

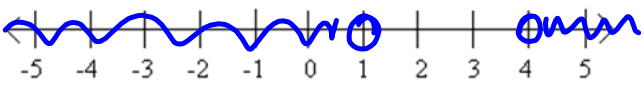
$-21 \quad -21$

$\frac{-7x}{-7} < \frac{28}{-7}$

$x > -4$



35. Graph the compound inequality x<1 or x>4.

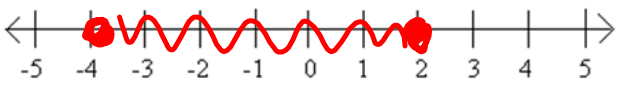


36. Solve and graph the compound inequality $-5 \le 2x+3 \le 7$

$-5 \le 2x+3$ & $2x+3 \le 7$

$-8 \le 2x$ $2x \le 4$

$-4 \le x$ $x \le 2$

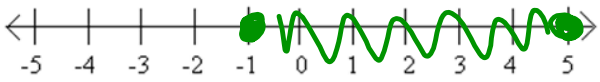


37. Solve and graph the absolute value inequality $|6x-12| \leq 18$

$6x-12 \leq 18$ and $6x-12 \geq -18$

$6x \leq 30$ $6x \geq -6$

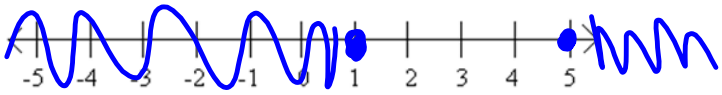
$x \leq 5$ and $x \geq -1$



38. Solve and graph the absolute value inequality $|x-3| \geq 2$

$x-3 \geq 2$ or $x-3 \leq -2$

$x \geq 5$ or $x \leq 1$



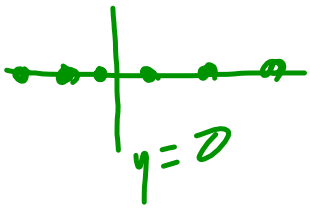
39. Find the solution of $7-4(2x-3)=6x-15$

$7-8x+12=6x-15$

$-8x+19=6x-15$

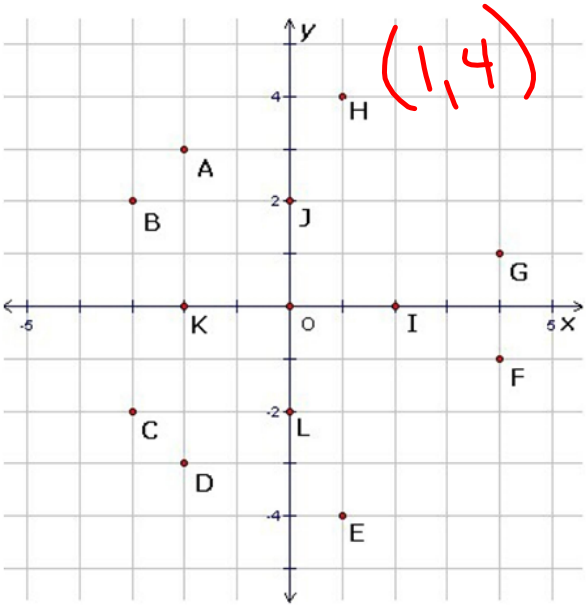
$-14x=-34$

$x=\frac{-34}{-14}$ or $\frac{17}{7}$



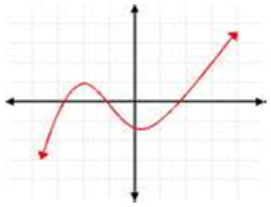
40. The y-coordinate of each point on the x-axis is 0?

41. What is the ordered pair for point H



(1,4)

42. Is the graph below a function?



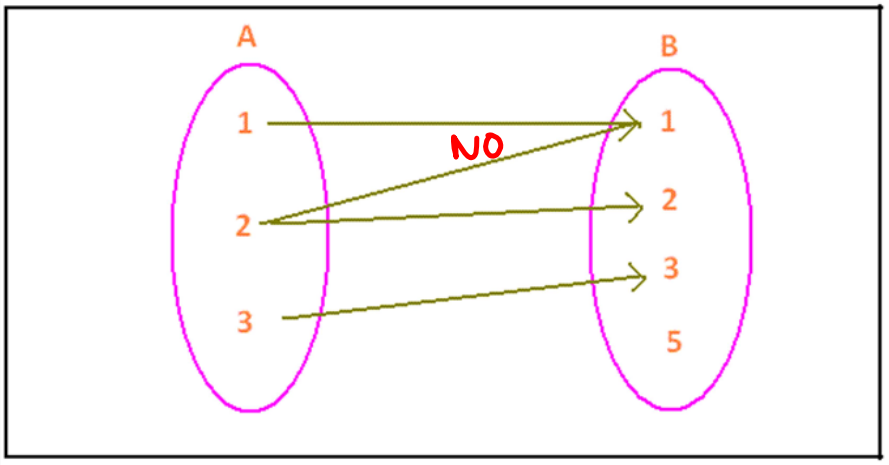
Yes

43. Solve $3x-4y=24$ for y.

$$\frac{-4y}{-4}=\frac{-3x}{-4}+\frac{24}{-4}$$

$$y=\frac{3}{4}x-6$$

44. Is the relation below a function?



45. If $g(x) = 5x^2 - 3x + 8$ what is the value of g(-3)? substitute

$= 5(-3)^2 - 3(-3) + 8$
$= 5(9) + 9 + 8$ (62)
$= 45 + 9 + 8$

46. Find the solution of the equation $3m + n = 12$ if the domain is $\{-2, 0, 4\}$

$3(-2) + n = 12$; $3(0) + n = 12$; $3(4) + n = 12$
$-6 + n = 12$ $0 + n = 12$ $12 + n = 12$
$n = 18$ $n = 12$ $n = 0$

47. What is the slope of the line passing through (5, -1), (8, 2)?

$m = \frac{y_2 - y_1}{x_2 - x_1}$ $m = \frac{2+1}{8-5}$
$m = 3/3$ or (1)

$m = \frac{y_2 - y_1}{x_2 - x_1}$ $\frac{8}{1} = \frac{r+5}{3-4}$ $-8 = r + 5$ $-13 = r$

48. Find the value of r so that the line through (4, -5), (3, r) has a slope of 8.

$\frac{8}{1} \times \frac{r+5}{-1}$

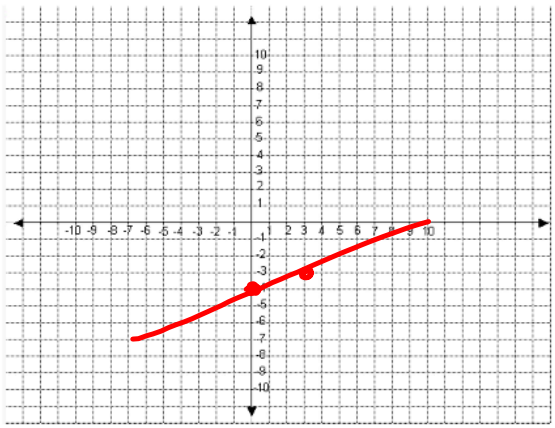
$7y = -6x + 14$

$y = -\frac{6}{7}x + 2$

$m = -\frac{6}{7}$

49. What is the slope of $6x + 7y = 14$?

50. Graph $x - 3y = 12$



$-3y = -1x + 12$

$y = \frac{1}{3}x - 4$