Algebra 1 Common Final Exam 2015

Name: _____
Date: _____   Block: _____

Write each of the following as an algebraic expression

1. 9 more than n

2. n squared

3. 5 less than u

4. the quotient of 72 and c

Evaluate each Expression

5. $4-(5-(5-2))$

6. $42(3-1)$

7. $(7+2+3)\div 6\cdot 5$

8. $15\div (6-3)-2-1$

Simplify each expression

9. $-7v+7v$

10. $10a+4a-7z$

11. $9(-2-10r)$

12. $-6(7b+4)$

Solve each equation

13. $-18=-2(8+k)$

14. $3-x=10$

15. $4+2x=-8$

16. $-3-(11x)=5+(-3x)$

17. $(b+8)-4=-3$

18. $\dfrac{x+1}{2}=\dfrac{2}{3}$

Solve each proportion.

19. $\dfrac{5}{r}=\dfrac{3}{9}$

20. $\dfrac{x}{9}=\dfrac{5}{2}$

Write each as an algebraic expression.

21. The product of x and 7 is equal to 28.

22. The difference of a number and 16 is 33.

   A) $n\cdot16\geq33$ B) $n-16=33$ C) $16-n=33$ D) $16+n=33$

23. The cost of a one-scoop ice cream sundae is \$2.75, and the cost of a two-scoop sundae is \$4.25. Write and evaluate an expression to find the total cost of 3 one-scoop sundaes and 2 two-scoop sundaes.

24. Black and white copies cost \$0.05 each, and color copies cost \$0.49 each. The equation $0.05x - 0.49y = 5$ represents the number of black and white copies x and color copies y that can be made with \$5.00. If no color copies are made, how many black and white copies can be made with \$5.00?

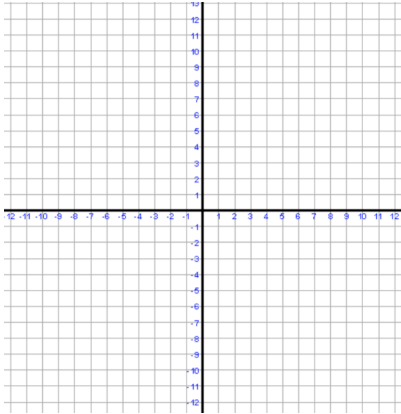A) 200   B) 100   C) 25   D) 10

25. Which equation *is not* a linear equation?

A) $2x+5y=3$ B) $y=-10$ C) $5=3xy$ D) $y=\dfrac{x}{7}+4$

26. If y varies directly as x and $y = 5$ when $x = 8$, find y when $x = 9$.

A) $\dfrac{72}{5}$ B) $\dfrac{45}{8}$ C) $\dfrac{40}{9}$ D) 6

27. Given the following ordered pairs, express each relation as a table, a graph and a mapping.   (-7, 1) (5,2) (-4, 2) (-1, 1)
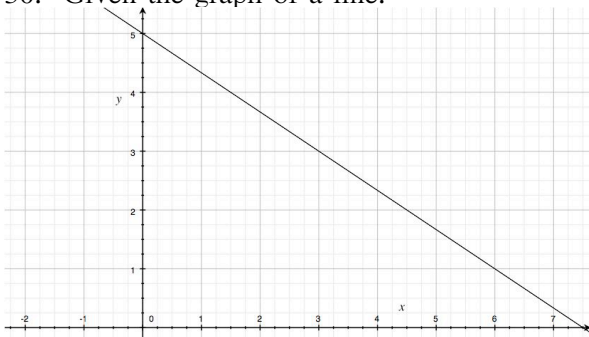

28. Find the domain and range for the relation in problem 22 above.

29. Find $f(-2)$ if $f(x) = -2x + 5$
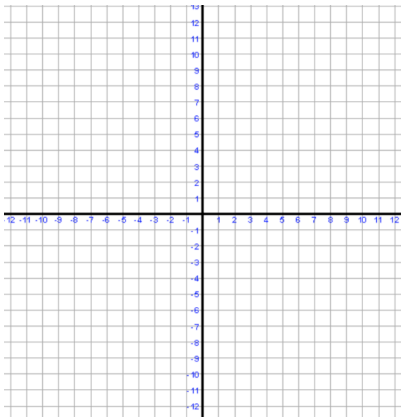
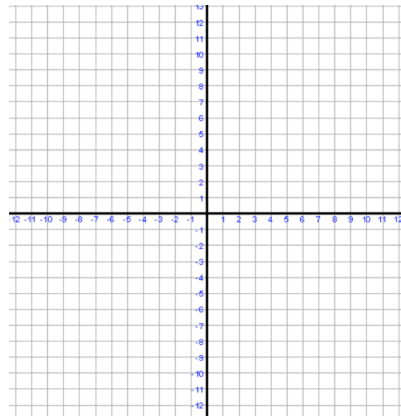**Find the slope of each line.**
30. Given the graph of a line.

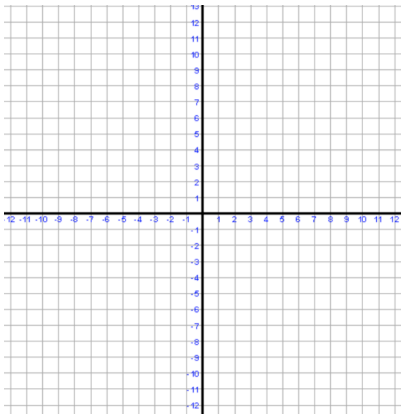31. The line that passes through the points (-12, -1) (10, -15)

Graph each line.
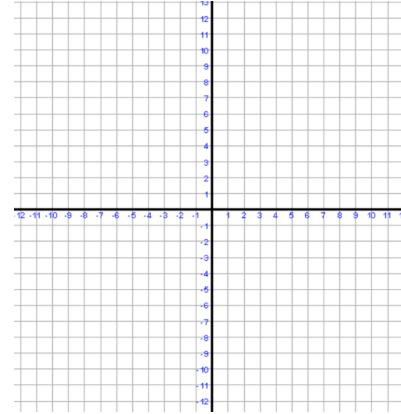
32. x-intercept = 6, y-intercept = 5

33. $5x+3y=-15$

34. $y=-4x-2$

35. $y=-\dfrac{2}{5}x-2$

36. Write the equation $x=-3y-1$ in standard form.

37. Write the slope intercept form of the line that passes through (0, 5) with a slope of $\dfrac{4}{3}$.

Solve the following equations for the given variable.

38. $-5x+2y=10z$ for y

39. Evaluate the expression $3x - 2y + z$ of x=3 , y= -1 , z= -20.

40. You want to rent a snowboard for a ski trip. There is an initial fee of $25, plus a $45 daily fee. Write a linear equation in slope-intercept form for this situation; where *y* represents the cost of renting a snowboard and *x* represents the number of days rented.

41. Between 2000 and 2008 the rent of Vanessa' s apartment is increasing $75 per year. Her rent in 2006 was $1050. Write an equation in slope-intercept form that gives the monthly rent, *y* (in dollars) in terms of the year, *x*. Let year 0 correspond to the year 2000.

Find the product.

42. $(-2x)(-4x^4)$

43. $5(2x^2 y^{-1})(4x^9 y)$

Find the quotient.

44. $\dfrac{-3x^2}{-x}$

45. $\dfrac{10xy^{-1}}{-2y^{-5}x^5}$

Find each sum, difference or product.

46. $-2x^4(5x^2-9)$

47. $(3x^2-2x+1)+(4x^2-x-7)$

48. $(x+1)(x-2)$

49. $(3x^2-2x)(x^2-3x-10)$

Factor each polynomial.

50. $3x^3y^4+15x^4y$

51. a^2-4a-5

52. $x^2+9x+20$