Algebra 1-2 and Algebra C-D **Name**_____
Review for Final Exam

1. Leslie has 5 nickels, 6 pennies and 8 dimes in her purse. She selected one at random. What is the probability that it was a penny or a dime?

2. If three hamburgers cost $7.35, how many hamburgers can you buy if you have $50.00 ?

3. In a box of chocolates, 20% are known to be creme filled. If 8 chocolates are found to be creme filled, how many chocolates are in the box?

4. If x = 2, y = -1 and z = 3, find the value of $3y\,(2x^2 + 3z)$

5. Find: $\dfrac{-3(12-5)+4}{15-2\cdot 3}$

6. If $3x + 4 - 2x + 7 = 8 - 4x - 1$, find the value of x.

7. What is the solution of $\dfrac{3t-3}{4} = \dfrac{2t+10}{6}$?

8. If $2a - 3y = 5c$, what is the value of y in terms of a and c ?

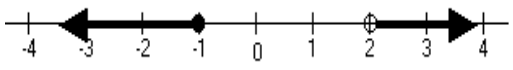
9. Solve for x: $6x - 4\,(x + 6) = 3x - 18 + x$

10. Write 5,840,000,000 in scientific notation.

11. The width of a rectangle is 5 meters less than its length. If the perimeter is 38 meters, what is the length of the rectangle?

12. Solve the compound inequality: $-6 \le 4x - 2 < 14$.

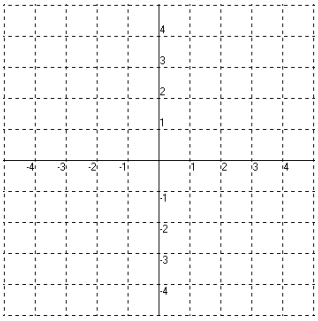
13. Which compound inequality is represented by the given graph:



14. Solve for a: $|2a + 5| = 19$

15. Solve for x: $13 - 5x < x - 11$

16. Graph the inequality : $y \geq -\frac{2}{3}x + 2$



17. Simplify: $(3x^4y^2) \cdot (-7x^2y^3)$

18. Joanna and Colleen collect CD's. Joanna has two less than four times the number of CD's that Colleen has. If Joanna has 38 CD's, write the equation that can be used to find the number of CD's in Colleen's collection.

19. Simplify: $\frac{15x^2y^3}{20x^2y^8}$

20. Find the value of $\left|\frac{(-16)+2}{9+(-2)}\right|$

21. Factor completely: $x^2 - 2x - 48$

22. Simplify: $(2x + 3y)^2$

23. What is the greatest monomial factor of the expression $18x^3y^2 + 30x^2y$?

24. Simplify the expression: $x^4y + 6x^4y^2 - 3x^2y^4 + 2x^2y^4 - 5x^4y^2$

25. Factor completely: $6x^2 + x - 15$

26. Simplify the expression: $\frac{k}{4} + \frac{5}{6k}$

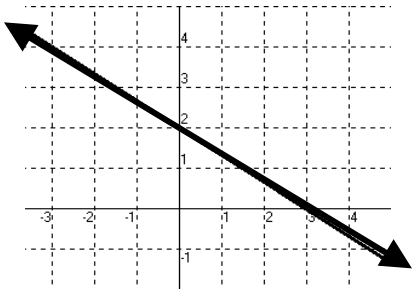
27. Find the product of $\frac{6x+6y}{x^2-y^2} \cdot \frac{5x-5y}{24}$, expressed in lowest terms.

28. Simplify the expression: $(9x^2 - 5x - 11) - (7x^2 + 3x - 2)$

29. Simplify the expression: $\frac{2ax^2}{bx} \div \frac{8a^2}{3b}$

30. Simplify: (5z + 6)(4z – 3)

31. If x = y + 4 and 2x – y = 9, find the value of y.

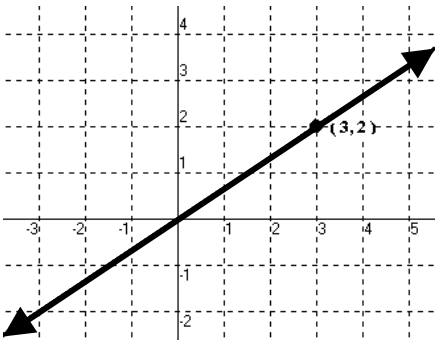


32. What is the slope of the line parallel to the line on the graph?

33. Find the equation of the line which passes through points (3, 7) and (-2, 12).

34. What is the slope of the line passing through the points (12, -2) and (18, -10) ?

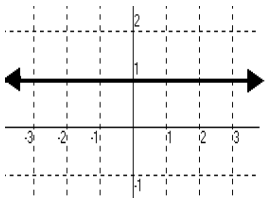
35. In the coordinate plane given, find the equation of the line.



36. Using the distance formula, find the length of a line segment whose endpoints have coordinates (2, -1) and (7, 11).

37. Determine which of the given graphs is a function.

a)



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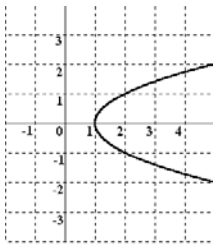
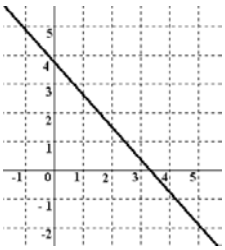


c)



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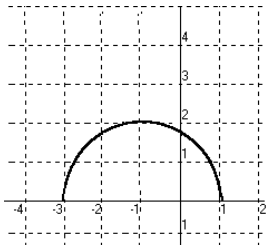


38. Find x for the following system:

$$-9x - 2y = 7$$
$$4x + y = 3$$

39. Find the equation of the line which is perpendicular to y = 2x + 9 and has a y-intercept of -7.

40. An art teacher bought some large canvases at $7.50 each and some small ones at $4 each, paying $162 in total. Altogether he bought 30 canvases. How many large canvases did he buy?

41. Solve: $3m^2 - 75 = 0$

42. Solve for x: $x^2 - 5x = -6$

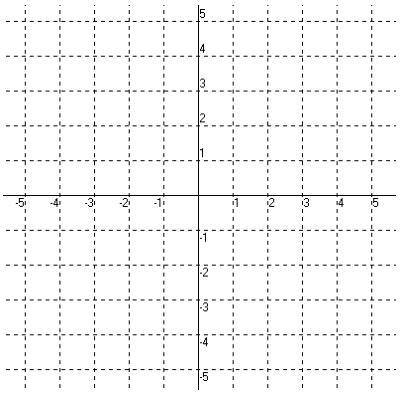
43. Solve for b: $(2b + 3)^2 = 49$

44. Solve: $3m^2 - 4m - 32 = 0$

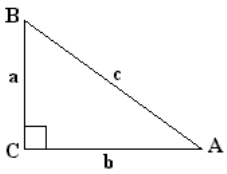
45. Find the sum of $\sqrt{128} - 3\sqrt{2}$

46. The side of a square is $7\sqrt{2}$ cm. Find the area in square cm.

47. Draw the graph of the function: $y = -x^2 + x + 2$



48. In the given figure, if c = 15 and b = 9, find the value of a.



49. What is the solution to the equation $\sqrt{3x} - 2 = 4$?

50. Simplify: $\sqrt{20n^7m^6}$ where $n > 0$ and $m > 0$.