

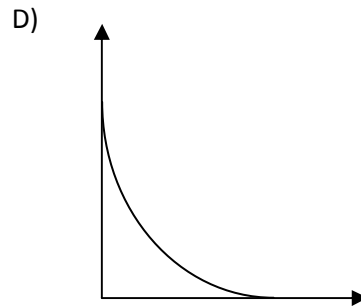
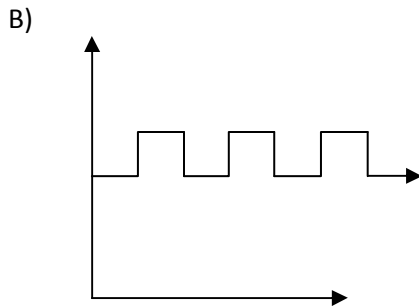
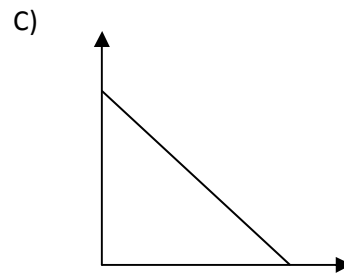
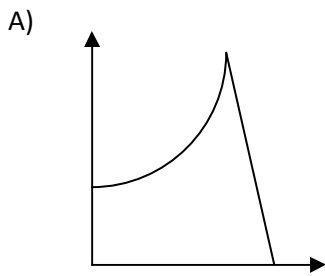
Name _____

Algebra 2 Summer Review

Multiple Choice

Identify the choice that best completes the statement or answers the question.

1. The principal square root of a positive real number is _____ negative.
A) always B) sometimes C) never
2. Which graph is the most appropriate to describe a quantity decreasing at a steady rate?



3. Which number is NOT written in scientific notation?
A) 3×10^{-8} B) 6.7×10^5 C) 8.7×10^{-5} D) 25.67×10^{-2}
4. Which number is written in scientific notation?
A) 7.8×10^{-5} B) 3.4×100^2 C) 0.84×10^6 D) -5×10^{-12}

Short Answer

1. $\frac{5}{6} + \frac{8}{12} =$

2. $\frac{6}{12} - \frac{3}{10} =$

Write as a decimal.

3. $\frac{2}{4}$

Write as a fraction in simplest form.

4. 0.68

5. A car travels 497 miles in 8 hours. Find the unit rate. Round to the nearest tenth if necessary.
6. A cyclist travels at a speed of 12 miles per hour for 2.5 hours. Find the distance the cyclist travels.
7. Evaluate $u + xy$, for $u = 18$, $x = 10$, and $y = 8$.
8. A pair of shoes costs \$52.99 and the state sales tax is 8%. Use the formula $C = p + rp$ to find the total cost of the shoes, where C is the total cost, p is the price, and r is the sales tax rate.
9. Evaluate the expression $(ab)^2$ for $a = 4$ and $b = 3$.
10. You can use the formula $C = \frac{5}{9}(F - 32)$ to convert temperature in degrees Fahrenheit, F , to temperature in degrees Celsius, C . What is 62° F in degrees Celsius? Round your answer to the nearest tenth.

Simplify the expression.

11. $-6.5(-4.9)$

12. $\frac{(-9)(-8)}{(-2)}$

13. $\frac{1}{2(-12m + 38)}$

14. $(-5 - c)(-1)$

15. $12^{-3} \cdot 12^{10} \cdot 12^0$

16. $(7.46)^{-5} \cdot (7.46)^6$

17. $[(t)^{-2}]^6$

18. $[(3xy)^3]^2(xy)^6$

19. $\frac{x^{14}}{x^7}$

20. $\left(\frac{3x}{2}\right)^4$

Name the property the equation illustrates.

21. $-2.1 \times 1 = -2.1$

22. $0 + x = x$

23. $8 \times \frac{1}{8} = 1$

Solve the equation.

24. $\frac{3}{7}x + 5 = 8$

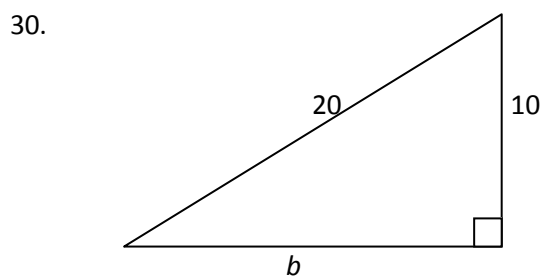
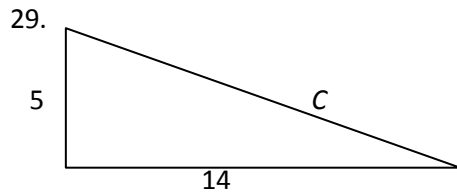
25. $3p - 1 = 5(p - 1) - 2(7 - 2p)$

26. $\frac{2}{10} = \frac{11}{x}$

27. Simplify $\sqrt{1.69}$.

28. Simplify $\sqrt{\frac{144}{49}}$.

Find the length of the missing side. If necessary, round to the nearest tenth.



Solve the inequality. Then graph your solution.

31. $x - 1 \leq -9$

32. $-8 \leq 2x - 4 < 4$

33. $|d + 2| \geq 6$

34. $|2x + 9| < 25$

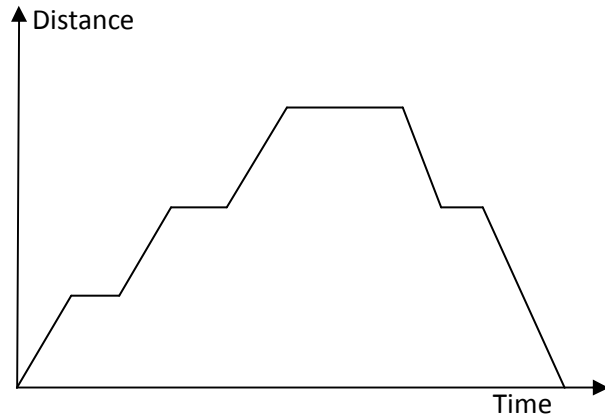
35. $12x - 3x + 11 > 4x - (17 - 9x)$

Solve the equation. If there is no solution, write *no solution*.

36. $|x| - 7 = 6$

37. $2|n| - 12 = 16$

38. Lena makes home deliveries of groceries for a supermarket. Her only stops after she leaves the supermarket are at traffic lights and the homes where she makes the deliveries. The graph shows her distance from the store on her first trip for the day. What is the greatest possible number of stops she made at traffic lights?



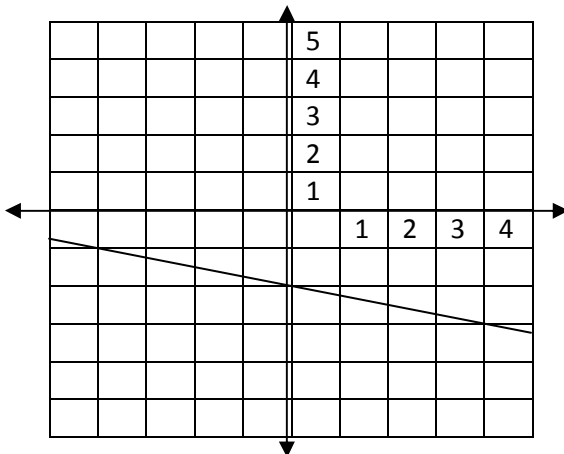
39. Evaluate $f(x) = -2x - 5$ for $x = 3$.

Graph the function.

40. $y = -2x + 3$

41. $y = |x| - 1$

42. **Find the slope of the line.**



Find the slope and y -intercept of the line.

43. $14x + 4y = 24$

Find the x - and y -intercept of the line.

44. $2x + 3y = -18$

Graph the equation.

45. $y + 2 = -(x - 4)$

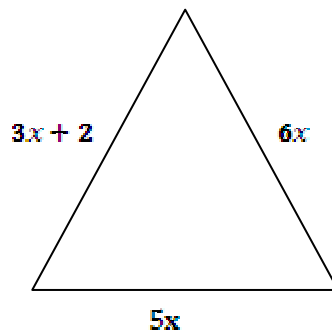
Are the graphs of the lines in the pair parallel? Explain.

46. $y = \frac{1}{6}x + 8$

$-2x + 12y = -11$

47. Giselle pays \$210 in advance on her account at the athletic club. Each time she uses the club, \$15 is deducted from the account. Model the situation with a linear function and a graph.

48. Write the perimeter of the figure.



Not to scale

Find the square.

49. $(2x - 6)^2$

Find the product.

50. $(j + 7)(j - 7)$

Factor the expression.

51. $15x^2 - 16xy + 4y^2$

52. $12d^2 + 4d - 1$

53. $6x^2 + 5x + 1$

54. $16j^2 + 24j + 9$

55. $r^2 - 49$

56. $3x^3 + 3x^2 + x + 1$