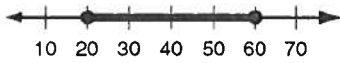


**Algebra 2 Summer Assignment**

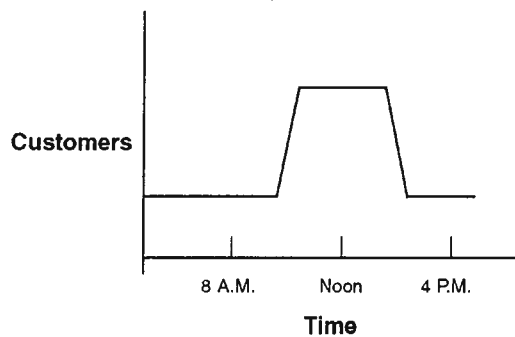
---

1. Evaluate  $d - c$  for  $c = 12$  and  $d = 8$ .
2. Subtract  $\frac{3}{4} - \frac{2}{5}$ .
3. A school purchased 888 pencils in boxes containing 12 pencils each. How many boxes of pencils were purchased?
4. Explain how to tell the difference between an integer and a non-integer number.
5. Find  $\sqrt{64}$ .
6. Simplify  $\frac{30 - 4 \cdot 2}{2 \cdot 2^2}$ .
7. Solve  $11 = x + 19$ .
8. Solve  $-3x = -27$ .
9. Enrique is trying to save \$672 for a new guitar. He earned \$420 in March by working in a bookstore for a total of 56 hours. How much does Enrique earn per hour?
10. There were 1200 boys at a school assembly. The ratio of boys to girls at the assembly was 20:23. How many girls were at the assembly?
11. 40% of what number is 24?
12. What is the simple interest earned on \$300 over 6 years at 4% interest?
13. A shoe factory produced 900 shoes on Monday. The factory produced 20% more shoes on Tuesday. How many shoes did the factory produce on Tuesday?
14. Students at a university need at least 32 credits to earn a degree.
15. Solve  $2x - 16 > 40$ .

16. Describe a situation that could be represented by the graph below.



17. Describe a situation that could be represented by the graph below.

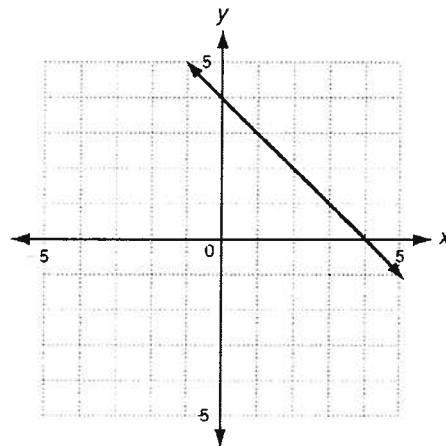


18. What is the domain of the relation  $\{(1, 2), (1, 6), (3, 2), (3, 6), (9, 2)\}$ ?

19. Which is the dependent variable in the following situation?  
*The daily cost of a rental car is \$40 plus 15 cents for each mile.*

20. Name an ordered pair that could be a solution to  $y = 5x + 7$ ?

21. What is the equation of the line below?



22. Find the common difference in the arithmetic sequence below.  
 78, 72, 66, 60, 54, ...

23. What is the y-intercept of  $3x + 5y = 15$ ?

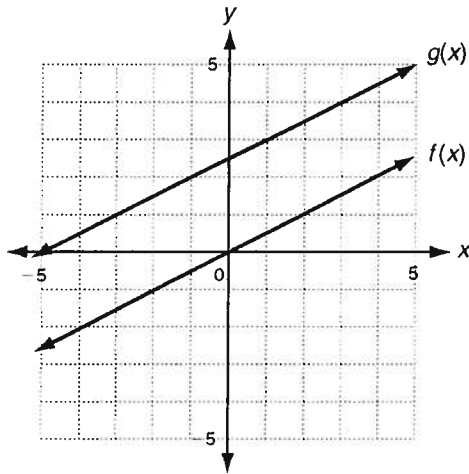
24. Which slope is steepest? Explain why.

F -9	H $\frac{1}{10}$
G -7	J $\frac{10}{9}$

25. Find the slope of the line that contains (6, 3) and (11, 12).

26. Write a function that has a y-intercept of 4.

27. The graphs of  $f(x)$  and  $g(x)$  are shown below. Which describes the transformation from  $f(x)$  to  $g(x)$ ?



28. Which ordered pair is a solution of the system  $\begin{cases} 2x - 3y = 17 \\ y = 2x - 11 \end{cases}$ ?

29. Solve the system  $\begin{cases} 2x + 3y = 15 \\ 6x - 4y = 32 \end{cases}$ .

30. Name an ordered pair that is a solution to  $y < 4x - 2$ ?

31. What is 0.0000523 in scientific notation?

32. Simplify  $x^5 \cdot x^2$ .

33. Simplify  $\frac{2^8}{2^6}$ .

34. Classify  $x^3 - 3x^2 + 12$  according to its degree and number of terms.

35. Multiply  $(r - 8)(r + 3)$ .

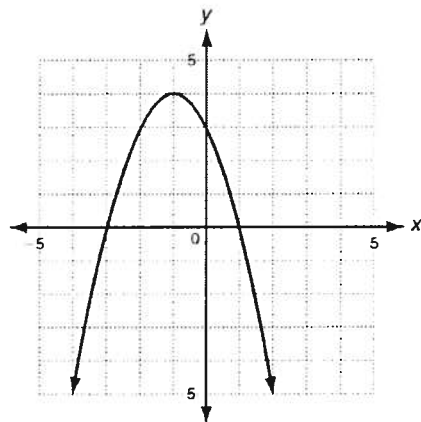
36. What is the prime factorization of 162?

37. What is the complete factorization of  $8x^3 - 24x$ ?

38. The area of a square is  $16x^2 + 24x + 9$ . What is an equivalent expression for the area of the square?

39. What is a quadratic function? Give an example.

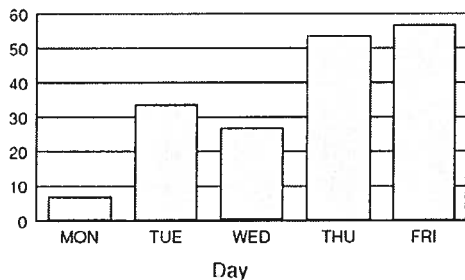
40. How many roots does the function graphed below have?



41. Solve  $x^2 = 144$ .

42. Students at a high school were asked "What is your favorite day of the school week?" According to the chart below, which day was the third most popular choice?

Favorite Day of Week



43. Jake's parents measure his height every year on his birthday. Which type of graph would be best to display the data?

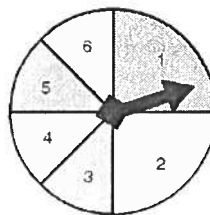
44. How many different ways can 3 people sit at a table with 5 seats?

45. Seven students took a quiz. The number of correct responses from each is recorded below.

Al	Ben	Carl	Dana	Ed	Fay	Gil
13	18	11	12	15	14	15

What is the mean number of correct responses?

46. The spinner is spun once. What is  $P(\text{number} \geq 5)$ ?



47. What is the next number in the sequence 2, 8, 32, 128, ...?

48. An old coin increases in value by 4% each year. In 2005 it was worth \$12. About how much is it worth in 2009?

49. Simplify  $\sqrt{90}$ .

50.  $y$  varies inversely as  $x$ .  $x_1 = 3$ ,  $y_1 = 40$ , and  $y_2 = 24$ . Find  $x_2$ .

51. Simplify  $\frac{y^2 - 25}{y - 5}$ .