Wagner School Math Assessment

Please complete the questions below.

1. $\frac{1}{10} - \frac{1}{12} =$

2. $\frac{1}{2} * (\frac{1}{3} - \frac{1}{6}) =$

3. $\frac{2/3}{4/5} =$

4. What is 12% of 85?

5. 20% of 15 is what % of 24?

6. The rate of inflation in 1994 was .026. How would this be expressed as a percent?

7. A student earned $2000 working at a summer job before entering college. The following summer, the student earned $2525. What percent increase did the student's earning grow from one summer to the next?

8. Tamara just received an 8% pay raise, which amounts to a $2,000 increase in her annual salary. Martin was earning $23,000 a year and just heard that as of next week, he will be making $24,500 a year. How much was Tamara making before her raise? Who received a greater percent increase in annual salary, Martin or Tamara?

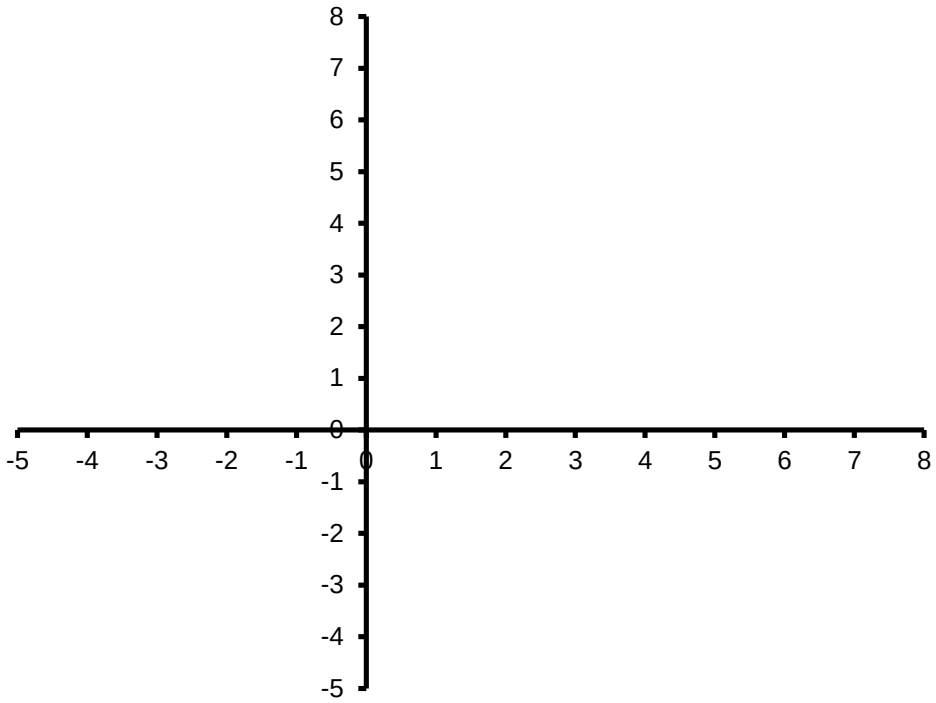
9. In the Big Bucks Lottery, the chance of winning a $10 prize is 1%. How many people do you expect would win a $10 prize if 1000 people each buy a single ticket to Big Bucks?

10. Suppose we want to compare the miles per gallon ratio of two cars. Our car traveled 120 miles on 4 gallons of gas. We find that our neighbor's car traveled 210 miles and used 6 gallons of gas. Which car gets the best gas mileage?

11. 50 is what proportion of 200?

12. Suppose you go to the store and purchase a 5-pound bag of peanuts for $2.10. Assuming that the price per pound doesn't change, how much will a 7-pound bag of peanuts cost?

13. Plot and label the following points in the axes given below:
(a) (2, 3) (b) (3, 2) (c) (4.5, -2) (d) (-3, -4) (e) (-3, 4)
(f) (0, 7) (g) (-3, 0)



14. What is the slope of the line with the equation $2y - x = 3$?

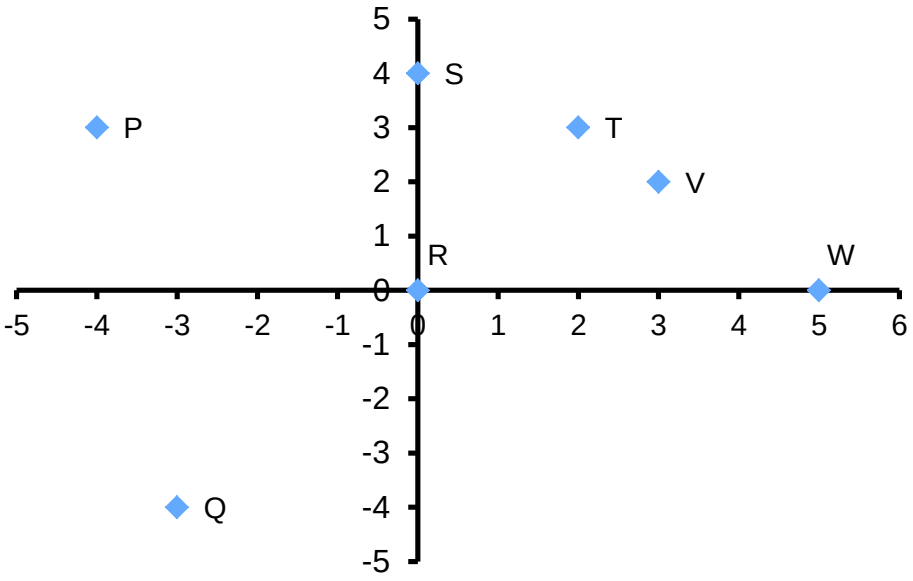
15. What is the equation of the line through the points (1, 5) and (3, -3)?

16. Point A is (4, 1) and Point B is (2, 5). What is the slope of the line that connects these two points?

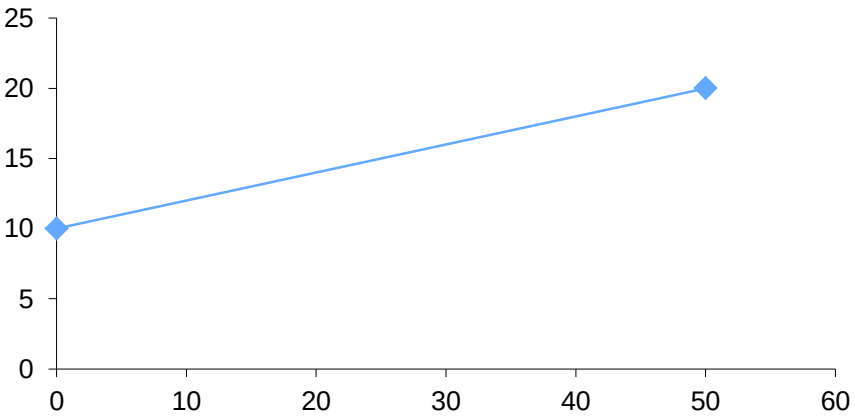
Use the graph below for questions 17– 18

17. Which letter represents the point (3, 2)?

18. Write the ordered pair for point W.

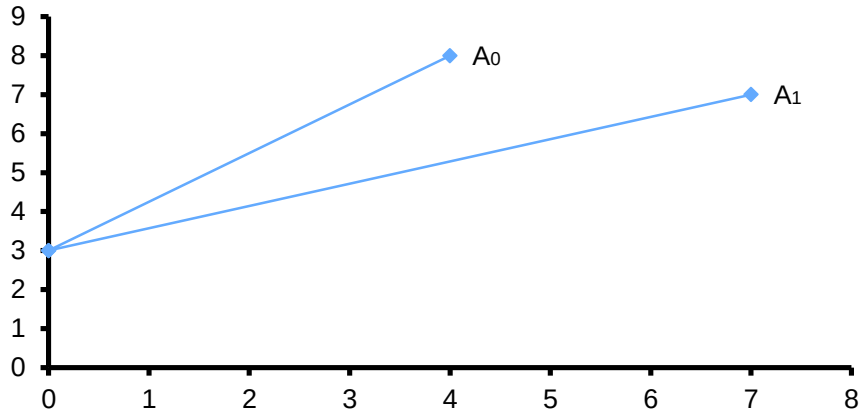


19. What is the equation of the line shown in the graph below?

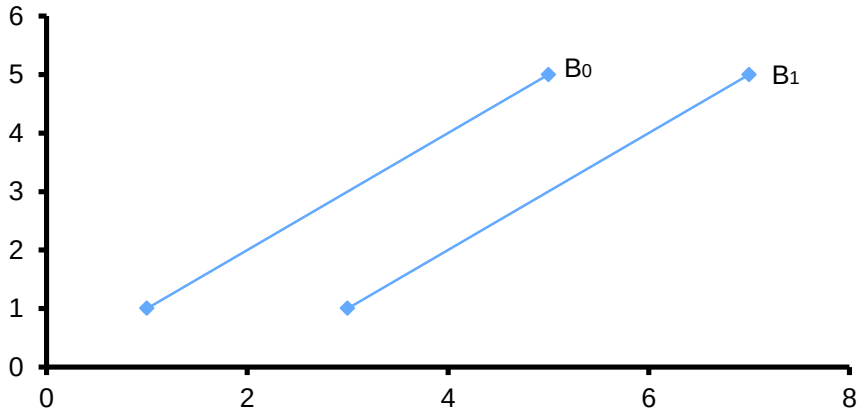


20. Using the graph in question #19 above, is the slope of the line positive, negative, infinite, or zero?

21. In the graph below, the line A shifts from its initial position of A_0 to its final position at A_1. If initially the equation of line A_0 is $y = mx + b$, what must have changed in this equation for this sort of shift to occur, y, m, x, or b?



22. In the graph below, the line B shifts from its initial position of B_0 to its final position at B_1. If initially the equation of line B_0 is y = mx + b, what must have changed in this equation for this sort of shift to occur, y, m, x, or b?



23. Solve for x: $3x + 2 = 17$

24. Solve for x: $2(x + 7) = 3(3 – x) + 8$

25. Solve for x: $ax = b(x + d)$

26. Solve for x: $\frac{1}{3+x} = \frac{1}{3x-1}$

27. Solve for x: $y = 2x + 3$

28. Linda purchased X items from a company for $8 each. The postage and handling charges for the first item is $3, plus $1 for each additional item. Write an algebraic expression which represents the total dollar amount of Linda's purchase, including postage and handling of X items.

29. The value of a bag of coins consisting of nickels, dimes, and quarters is $1.90. There are half as many quarters as nickels, and three more nickels than dimes. Write an algebraic expression representing this information, and solve for how many coins of each kind are in the bag.

30. Use the following system of equations to solve for x and y:

$y - 3x = 5$ and $y + x = 3$