

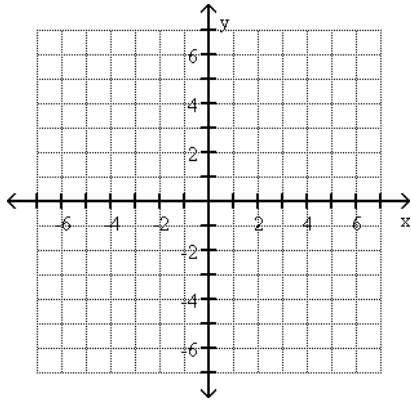
Name _____

PRINT OUT ENTIRE REVIEW AND SHOW ALL YOUR WORK.

Plot the given point in a rectangular coordinate system.

1) $(-2, -3)$

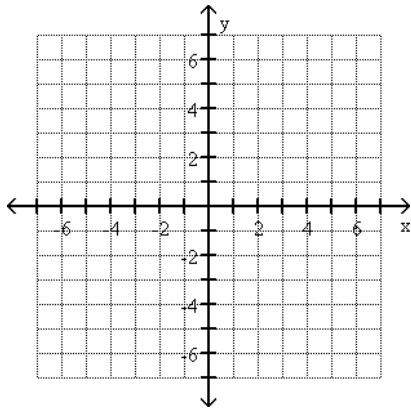
1) _____



Graph the equation.

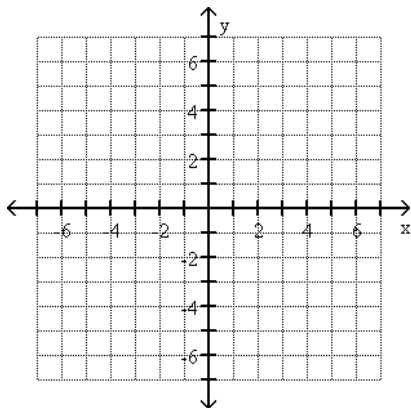
2) $y = 2x + 6$

2) _____



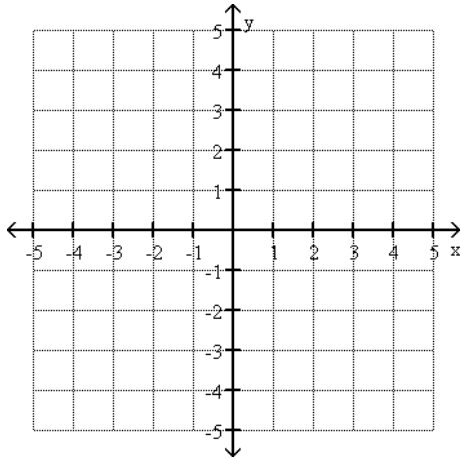
3) $y = -\frac{1}{6}x - 6$

3) _____



4) $2x + 3y - 10 = 0$

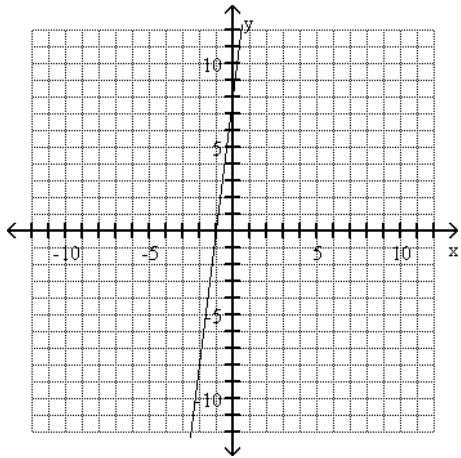
4) _____



Use the graph to determine the x- and y-intercepts.

5)

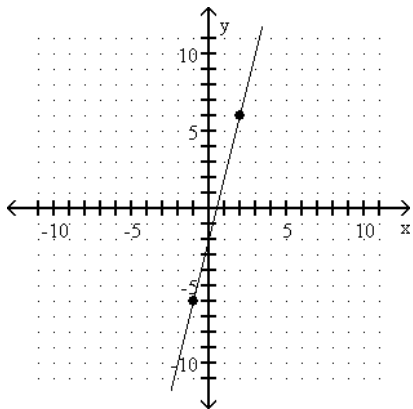
5) _____



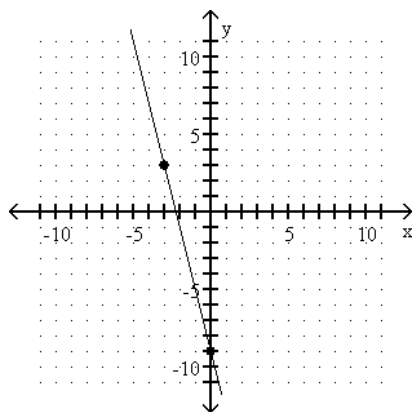
Identify whether the slope is positive, negative, zero, or undefined.

6)

6) _____



7)



7) _____

Find the slope of the line through the points.

8) $(-8, -9)$ and $(2, 7)$

8) _____

9) $(6, 8)$ and $(9, 9)$

9) _____

Write the slope-intercept form of the equation of the line satisfying the given conditions.

10) Through $(4, -3)$; slope = -7 ;

10) _____

Write an equation in slope-intercept form of a line satisfying the set of conditions.

11) $m = 9$, y-intercept $\left(0, -\frac{4}{5}\right)$

11) _____

12) $m = 2$, y-intercept $(0, -5)$

12) _____

13) Slope $-\frac{2}{5}$; $b = \frac{8}{5}$

13) _____

Evaluate the function at the given value of the independent variable and simplify.

14) $f(x) = \frac{x^3 + 7}{x^2 + 5}$; $f(-1)$

14) _____

15) $f(x) = \sqrt{x + 13}$; $f(-4)$

15) _____

16) $f(x) = -3x - 8$; $f(-2)$

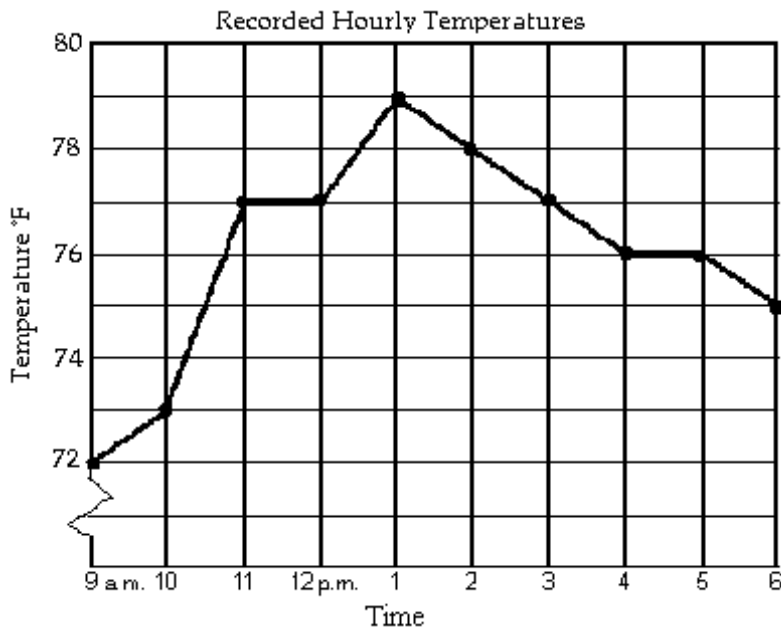
16) _____

Solve the problem.

17) The function $P(x) = 0.7x - 55$ models the relationship between the number of pretzels x that a certain vendor sells and the profit the vendor makes. Find $P(600)$, the profit the vendor makes from selling 600 pretzels.

17) _____

The line graph shows the recorded hourly temperatures in degrees Fahrenheit at an airport.



18) At what time was the temperature the highest?

18) _____

19) During which hour did the temperature increase the most?

19) _____

20) At what time was the temperature its lowest?

20) _____

Evaluate the algebraic expression for the given value or values of the variable(s).

21) $\frac{y - 4x}{3x + xy}$; $x = -3$ and $y = 5$

21) _____

22) $6 + 6(x - 2)^3$; $x = 4$

22) _____

23) $\frac{9(x - 1)}{2x + 8}$; $x = 5$

23) _____

Perform the requested conversions. Round decimals to the nearest thousandth and percents to the nearest tenth of a percent, if necessary.

24) Convert $\frac{1}{12}$ to an equivalent decimal and percent.

24) _____

25) Convert 0.625 to an equivalent fraction and percentage.

25) _____

26) Convert 34.4% to an equivalent fraction and decimal.

26) _____

27) Convert 1.5 to an equivalent fraction and percent.

27) _____

Solve.

28) If a rock falls from a height of 40 meters above the ground, the height H (in meters) after x seconds can be approximated using the formula $H = 40 - 4.9x^2$. What is the height of the rock after 2 seconds? 28) _____

29) A stone is dropped from a tower that is 810 feet high. The formula $h = 810 - 16t^2$ describes the stone's height above the ground, h , in feet, t seconds after it was dropped. What is the stone's height 5 seconds after it is released? 29) _____

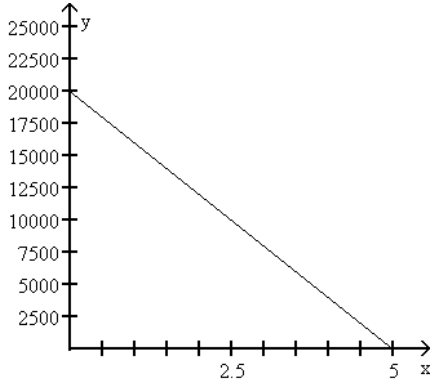
30) It is estimated that y , the number of items of a particular commodity (in millions) sold in the United States in year x , where x represents the number of years since 1990, is given by the formula $y = 1.88x + 3.45$. That is, $x = 0$ represents 1990, $x = 1$ represents 1991, and so on. According to the formula, how many items sold in 1998? 30) _____

31) The formula $S = A \left(\frac{(1+r)^t + 1}{r} - 1 \right)$ models the value of a retirement account, where A = the number of dollars added to the retirement account each year, r = the annual interest rate, and S = the value of the retirement account after t years. If the interest rate is 11%, how much will the account be worth after 15 years if \$2200 is added each year? Round to the nearest whole number. 31) _____

32) The function $f(x) = 800(0.5)^{x/80}$ models the amount in pounds of a particular radioactive material stored in a concrete vault, where x is the number of years since the material was put into the vault. Find the amount of radioactive material in the vault after 190 years. Round to the nearest whole number. 32) _____

Solve.

- 33) A school has just purchased new computer equipment for \$20,000.00. The graph shows the depreciation of the equipment over 5 years. The point (0, 20,000) represents the purchase price and the point (5, 0) represents when the equipment will be replaced. Write a linear equation in slope-intercept form that models the value of the equipment, y , x years after purchase. Use the model to predict the value of the equipment after 3 years?



33) _____

Find the indicated sum.

34) $\sum_{i=3}^6 9i$

34) _____

35) $\sum_{i=7}^{10} \frac{1}{i-4}$

35) _____

36) $\sum_{i=1}^4 \frac{1}{4i}$

36) _____

Has the percentage of young girls drinking milk changed over time? The following table is consistent with the results from "Beverage Choices of Young Females: Changes and Impact on Nutrient Intakes" (Shanthy A. Bowman, *Journal of the American Dietetic Association*, 102(9), pp. 1234-1239):

		Nationwide Food Survey Years			Total
		1987-1988	1989-1991	1994-1996	
Drinks Fluid Milk	Yes	354	502	366	1222
	No	226	335	366	927
	Total	580	837	732	2149

- 37) Find the following: 37) _____
- What percent of the young girls reported that they drink milk?
 - What percent of the young girls were in the 1989-1991 survey?
 - What percent of the young girls who reported that they drink milk were in the 1989-1991 survey?
 - What percent of the young girls in 1989-1991 reported that they drink milk?

Find the mean for the given sample data. Unless indicated otherwise, round your answer to one more decimal place than is present in the original data values.

- 38) Andrew asked seven of his friends how many cousins they had. The results are listed below. Find the mean number of cousins. 38) _____
- 18 12 7 13 7 2 7

- 39) The students in Hugh Logan's math class took the Scholastic Aptitude Test. Their math scores are shown below. Find the mean score. 39) _____
- 536 608 344 340 596
357 343 566 470 482

Solve the problem.

- 40) Elaine gets quiz grades of 71, 75, and 64. She gets a 60 on her final exam. Find the weighted mean if the quizzes each count for 20% and the final exam counts for 40% of the final grade. Round to one decimal place. 40) _____
- 41) Michael gets test grades of 73, 77, 82, and 86. He gets a 93 on her final exam. Find the weighted mean if the tests each count for 15% and the final exam counts for 40% of the final grade. Round to one decimal place. 41) _____

42) Lisa has 4 skirts, 7 blouses, and 4 jackets. How many 3-piece outfits can she put together assuming any piece goes with any other? 42) _____

Use the formula for ${}_nP_r$ to evaluate the expression.

43) $10P_3$ 43) _____

Use the formula for ${}_nC_r$ to evaluate the expression.

44) $10C_4$ 44) _____

Solve the problem.

45) How many 4-digit numbers can be formed using the digits 1, 2, 3, 4, 5, 6, 7, 8, 9, and 0? No digit can be used more than once. 45) _____

46) A club elects a president, vice-president, and secretary-treasurer. How many sets of officers are possible if there are 15 members and any member can be elected to each position? No person can hold more than one office. 46) _____

Does the problem involve permutations or combinations? Do not solve.

47) In a student government election, 7 seniors, 2 juniors, and 3 sophomores are running for election. Students elect four at-large senators. In how many ways can this be done? 47) _____

48) A club elects a president, vice-president, and secretary-treasurer. How many sets of officers are possible if there are 15 members and any member can be elected to each position? No person can hold more than one office. 48) _____

Solve the problem.

49) A stack of 7 different cards are shuffled and spread out face down. If 4 cards are turned face up, how many different 4-card combinations are possible? 49) _____

50) Ron finds 9 books at a bookstore that he would like to buy, but he can afford only 5 of them. In how many ways can he make his selection? How many ways can he make his selection if he decides that one of the books is a must? 50) _____

Use your calculator to perform the indicated operations. Give as many digits in your answer as shown on your calculator display.

51) $(4.2)^2 + 8.8 - 8.7$ 51) _____

52) $6.2 - 6(4.2 \div 2 + 4)$ 52) _____

53) $\frac{92.7 - 3.06}{2 \times \sqrt{8}}$ 53) _____

54) $4\sqrt{7}$ 54) _____

55) $2^{-1.4}$ 55) _____

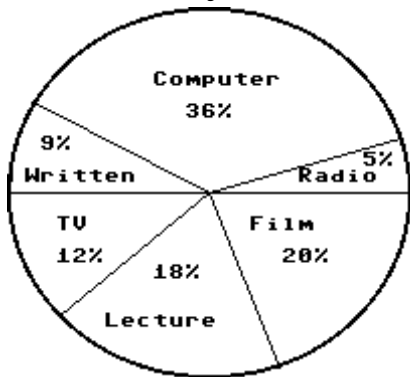
Use your calculator to perform each calculation and observe the answers. Use inductive reasoning to determine which statement is true.

56) $\frac{(-3) \times 24}{8 \times 3}$; $\frac{(-14) \times 25}{(-5) \times (-7)}$; $\frac{-3 \times (-40)}{(-2) \times (-12) \times (-7)}$; $\frac{-3.8 \times (-4) \times 1.3 \times (-5)}{(-9) \times (-9.4) \times (6.1)}$ 56) _____

What is true about expressions containing products of nonzero numbers in both the numerator and denominator?

- A) If the total number of negative numbers in the expression is odd, the result is positive.
- B) If the total number of negative numbers in the expression is odd, the result is smaller than -1.
- C) If the total number of negative numbers in the expression is odd, the result can be either negative or positive.
- D) If the total number of negative numbers in the expression is odd, the result is negative.

In a school survey, students showed these preferences for instructional materials. Answer the question.

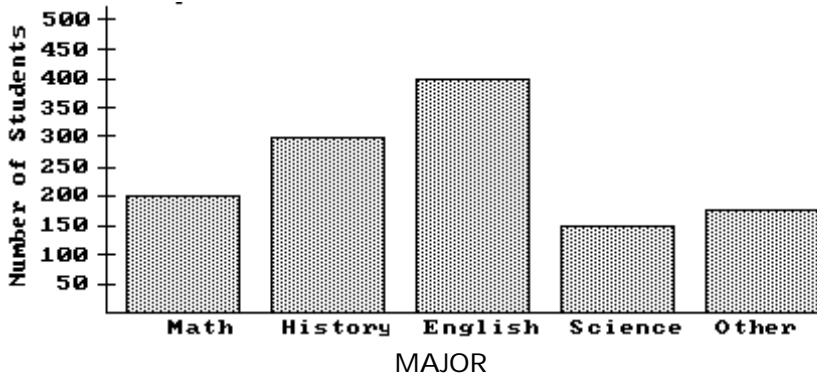


57) About how many students would you expect to prefer computers in a school of 650 students? 57) _____

58) About how many students would you expect to prefer films in a school of 350 students? 58) _____

59) About how many students would you expect to prefer written materials in a school of 400 students? 59) _____

The bar graph below shows the number of students by major in the College of Arts and Sciences. Answer the question.

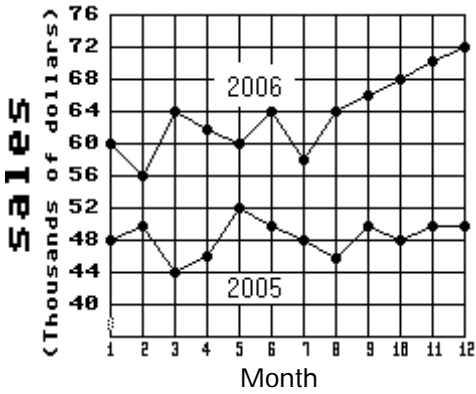


60) How many students are in the College of Arts and Sciences? 60) _____

61) Which two majors are the most popular? 61) _____

Use this graph to answer the question.

Big "D" Sales
2005, 2006



62) What were the total sales for the first 6 months of 2006? 62) _____

63) Which month in 2005 had the lowest sales? 63) _____

64) Which month in 2006 had the highest sales? 64) _____