

1. Tami had 1800 baseball cards. She sold $\frac{1}{2}$ of them and then gave away $\frac{4}{5}$ of her remaining ones. How many cards does Tami have left?

1. _____

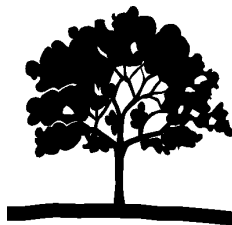
2. During the 20th century, eighteen different men held the office of President of the United States. Eleven of them were members of the Republican Party. What percent of the eighteen presidents was Republican? Round your answer to the nearest whole number.

2. _____

3. At the 2000 Olympics in Sydney, Australia, 10,200 athletes participated in 28 different sports over a period of 16 days. What was the average number of athletes per sport? Round your answer to the nearest whole number.

3. _____

4. A tree doubled its height every year until it reached a height of 32 feet at the end of 6 years. What was the height of the tree, in feet, at the end of 3 years?



4. _____

5. The formula $d = 16t^2$ is used to calculate the distance, d , in feet, a free falling object, starting from rest, will travel in t seconds. How many seconds will it take for a ball, starting from rest, to free fall from a height of 64 feet to the ground?

5. _____

6. What is the sum of the reciprocals of the natural-number factors of 6?

6. _____

7. What coordinate on the number line is equidistant from the coordinates -5.65 and 8.75 ? Express your answer as a decimal to the nearest hundredth. 7. _____

8. What is the largest integer whose cube is less than $10,000$? 8. _____

9. Enrollment information for a high school computer class is provided. What is the median age of the students in the class? 9. _____

<u>Age</u> <u>(in years)</u>	<u>Number</u> <u>of Students</u>
14	5
15	9
16	6
17	3
18	1

10. Chelsea has made 6 of 17 free throw attempts. How many consecutive free throws must she make to raise her percentage of free throws made to exactly 50%? 10. _____



11. Define $a \# b = ab - a + b - 8$ for all real numbers a and b . $x \# 3 = 37$. What is the value of x ? 11. _____

12. The sum of a negative integer, N , and its square is 6. What is the value of N ? 12. _____

13. What is the sum of the prime numbers between 30 and 50? 13. _____

14. A circular spinner to be used in a game is divided by radii into 5 wedge-shaped pieces such that 4 pieces have equal area and the area of the remaining piece is twice the area of any one of the other pieces. How many degrees are in the central angle of the largest piece? 14. _____

15. What is the probability that a randomly selected positive integer less than or equal to 100 is divisible by 7? Express your answer as a common fraction. 15. _____

16. Fifty people arrange themselves in three rows, such that the first and third rows have the same number of people, while the middle row has 2 more people than each of the other rows. How many people are in the first row? 16. _____

17. The number of inches in both the length and the width of a rectangle are prime numbers. The area of the rectangle is 391 square inches. What is the number of inches in the perimeter of the rectangle? 17. _____

18. What is the ratio of x to y given that $4(5x + 3y) = 3(x + 7y)$? Express your answer as a common fraction. 18. _____

19. Cheldelin Middle School has 12 doors to enter or leave the building. In how many ways is it possible to enter the building by one door and leave the building by a different door? 19. _____

20. A jar contains 10 red, 7 blue and 5 yellow marbles. Blue marbles are then added in order to change the probability of randomly selecting a blue marble from the jar to “greater than $\frac{1}{2}$.” What is the least number of blue marbles that must be added? 20. _____

21. How many positive perfect squares less than 300 are multiples of 9? 21. _____

22. What is the least common multiple of the numbers 1332 and 888? 22. _____

23. What is the probability that the square root of a randomly selected two-digit whole number is less than eight? Express your answer as a common fraction. 23. _____

24. Mathman rides $\frac{3}{5}$ of a mile in $1\frac{1}{2}$ minutes on his bicycle. What is his average speed in miles per hour? 24. _____



25. During the month of June, Jonathan ran 2 miles on each Tuesday and Thursday, and 7 miles on each Saturday and Sunday. He did not run on Mondays, Wednesdays or Fridays. June 1 was on a Friday. How many miles did Jonathan run in June? 25. _____

26. Before taking his last test in a class, the arithmetic mean of Brian's test scores is 91. He has determined that if he scores 98 on his last test, the arithmetic mean of all his test scores will be exactly 92. How many tests, including the last test, does Brian take for this class?



26. _____

27. A 24-foot by 72-foot rectangular dance floor is completely tiled with 1-foot by 1-foot square tiles. Two opposite corners of the dance floor are connected by a diagonal. This diagonal passes through the interior of exactly how many tiles?

27. _____

28. The length of the year on the planet Mars is exactly 697 days. If Mars has a calendar with a 12-day week, and year 0 begins on the first day of the week, what is the next year which will begin on the first day of the week?



28. _____

29. The addition problem below has a unique solution. Each of the letters A, B and C represents a different nonzero digit. What is the product of A, B and C?

$$\begin{array}{r} A B B \\ + B B A \\ \hline C A B C \end{array}$$

29. _____

30. Solve for x: $3^3 \cdot 9^3 \cdot 27^3 \cdot 81^3 = 9^x$.

30. _____