

2011 Thanksgiving Math Tournament

November 26, 2011

Names: _____

Grade: _____

1. Evaluate: $12\overline{)156}$
2. How many vertices does a cube have?
3. How many positive integers are factors of 40?
4. What is the perimeter, in meters, of a regular octagon with sides measuring 23 m?
5. In how many distinguishable ways can the letters in the word "MOMMY" be arranged?
6. What is the length, in meters, of the hypotenuse of a right triangle with legs measuring 5 m and 12 m?
7. What is the sum of the positive integers from 1 to 50 inclusive?
8. What is the area, in square meters, of a rectangle with sides measuring 15 m and 9 m?
9. What is the mode of the data set $\{1, 3, 5, 1, 7, 5, 2, 7, 5, 6, 3, 5, 7\}$?
10. What is the sum of twenty-four and thirty-seven?
11. When the special number is decreased by 15 and this result is divided by four, the final result is 31. What is the special number?

2011 Thanksgiving Math Tournament

November 26, 2011

12. How many of these numbers are divisible by two? 12, 21, 35, 49, 57, 63, 79, 88, 96
13. If Iris drives at a rate of 30 miles per hour for one hour and a speed of 60 miles per hour for two hours, what is her average speed in miles per hour?
14. How many diagonals can be drawn in a regular hexagon?
15. A bag of marbles contains nine red marbles, seven white marbles, and two blue marbles. When a single marble is drawn, what is the probability that the marble is not red?
16. Evaluate: $\frac{3}{4} \times \frac{14}{27}$
17. A recursive sequence is defined by $f_1 = 6$ and $f_n = f_{n-1}^2 - 29$ for $n > 1$. What is the value of f_3 ?
18. In the subtraction problem to the right, each instance of a given letter represents a particular digit, and different letters represent different digits (e.g. if one A is a 9, all of the A's are 9's and B cannot be 9). What is the smallest possible value of the four-digit number ABCD?
- $$\begin{array}{r} ABC \\ -DB \\ \hline DD \end{array}$$
19. If three processors can perform 48 million operations per second, how many seconds would it take one processor to perform 24 million operations?
20. What is the perimeter, in meters, of an isosceles triangle with sides measuring 9m and 4m?