

2011 Thanksgiving Math Tournament

November 26, 2011

Name: _____

Grade: _____

1. What is the mean of the data set $\{4, 19, 11, 37, 9\}$?
2. Tom is 32 years older than Katie, and in 11 years he'll be three times her age. How old is Tom right now?
3. What is the average of the data set $\{2, 5, 3, 2, 7, 6, 5, 2, 2, 4, 7\}$?
4. If today is Saturday, what day of the week will it be 111 days from today?
5. If Randy drives at forty miles per hour for three hours and sixty miles per hour for two hours, what is Randy's average speed over the entire trip?
6. When two marbles are drawn from a bag containing three red marbles and two blue marbles, what is the probability that both marbles are red?
7. Three positive numbers add to a sum of 33. The highest number is 5 more than the middle number. The lowest number is 2 less than the middle number. What are the three numbers?
8. You have to memorize 500 words in 25 days, and you already know 125 of them. If you memorize the same number of words every day, how many words do you have to memorize per day?

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9. Five people share a bag of candy. Ernie takes $\frac{1}{2}$ of the bag, and then Ajax takes $\frac{1}{3}$ of what is left. Bert takes $\frac{1}{4}$ of what is left and John then takes $\frac{1}{5}$ of what is left. Bob takes the remaining 12 candies. How many candies were in the bag originally?

10. What is the least common multiple of 21 and 35?

11. What is the tenth term of an arithmetic sequence with first term 18 and common difference 7?

12. What is the missing term of the sequence 14, 17, 24, 35, 50, __, 92, 119, ...?

13. What is the area, in square meters, of an equilateral triangle with sides measuring 10 m?

14. How many prime numbers are between 60 and 90?

15. How many positive three-digit integers are palindromes?

16. Amanda, Bob, and Carlson have a total of \$42. If Carlson has twice the amount of money as Amanda, and Bob has \$2 more than Amanda, how much more money does Carlson have than Bob?

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17. What is the area, in square meters, of a right triangle with legs measuring 4 meters and 7 meters?
18. How many positive integers are factors of 60?
19. How many subsets of $\{1, 2, 4, 5, 7, 8, 10\}$ contain no even numbers?
20. What value(s) of p satisfy $p^2 + 24 = 10p$?
21. In a math competition with 25 problems, you get 5 points for answering a problem correctly, 1 point for skipping a question, and 0 points for answering it wrong. If Red got 98 points, how many did he answer wrong?
22. A dozen cupcakes take 3 times longer to make than a dozen donuts. It takes Mark 30 min. to make a dozen donuts. How long will it take him to make 2 dozens cupcakes?
23. Homer drove 40 miles in 5 hours. At the same speed, George drives 16 miles. How many hours did George take?
24. Ellie and Angela start biking in opposite directions from the same starting point at the same time. Ellie bikes at 10 mph, while Angela bikes at 8 mph. How long will it take in hours for Ellie and Angela to be 90 miles apart?

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25. Two rectangles have the same perimeter “ x ”. If one rectangle has an area of 16 square inches, and the other is larger by 8 square inches, what is x ? (Assume the length and widths are whole numbers)
26. If a 20-foot long chain with posts at intervals of two feet is used to block off a parking lot entrance, how many posts are needed?
27. When five coins are flipped, what is the probability that exactly two of them are heads?
28. If a kindergarten teacher places her children 4 on each bench, there will be 3 children who will not have a place. However, if 5 children are placed on each bench, there will be 2 empty places. What is the smallest number of children the class could have?
29. Using the numerals 2, 4, 6, and 7 exactly once each, and the operations of addition, subtraction, multiplication, and division (and parentheses) as many times as you like, write an expression that evaluates to 24.
30. A regular polygon has vertices named with the letters A, B, C, etc. in clockwise order. If a line segment from B to F passes through the center of the polygon, how many sides does the polygon have?