2010 Rocket City Junior Math Mania
Individual Test – 5th Grade

1. Evaluate: $96 \div 4$

2. I have 12 coins (pennies, nickels, and dimes) in my piggy bank worth 59 cents. How many pennies do I have?

3. What is the word describing a triangle with three congruent sides? (scalene, equilateral, or isosceles)

4. How many positive integers are factors of 80?

5. What is the mode of the data set {5, 3, 9, 2, 3, 2, 7, 8, 4, 2, 5, 9}?

6. Evaluate: $43^2 - 37^2$

7. If five zebras can be exchanged for either seven yaks or four wombats, how many yaks could be exchanged for thirty-two wombats?

8. What is the measure, in degrees, of an interior angle in a regular octagon?

9. If $q(p) = 2p - 3$, evaluate $q(q(7))$.

10. How many prime numbers are there between 20 and 50?

11. Evaluate **as a decimal**: 2.3×19

12. What number is half the sum of 48 and 86?

13. When my favorite number is divided by three and this result is then increased by seven, the final result is nineteen. What is my favorite number?

14. What is the perimeter, in meters, of a regular pentagon with sides measuring 9 m each?

15. When I asked the 38 people at my party what they wanted on their pizza, 22 said olives and 29 said mushrooms. If 4 people wanted neither of these, how many wanted both?

16. If 40% of a number is 18, what is the number?

17. What is the sum of twenty-nine and eighteen?

18. What is the area, in square meters, of a right triangle with legs measuring 8 m and 9 m?

19. What is the sum of the positive odd numbers less than 25?

20. Using the numerals 2, 3, 4, and 6 exactly once each and the operations +, -, ×, and ÷ (and parentheses) as much as you like, write an expression equal to 23.

21. Round the number 123.456 to the nearest tenth.

22. When a positive, two-digit number is tripled and this result is reduced by two, the result is the same number except that its digits have been reversed. What was the original number?

23. An angle is supplementary to $140°$. What is the measure, in degrees, of the angle's complement?

24. What is the median of the data set {7, 3, 19, 4, 9, 11, 8, 15, 1}?

25. Evaluate: $9^2 - 8 \times (7 + 6) \div 4$

26. What value(s) of b satisfy $4b - 5 = 23$?

27. A cow is tied to an external corner of a rectangular barn measuring 40 m by 35 m. If the cow's rope is 20 m long, what is the area, in square meters, which the cow can graze? Note: the barn door is closed; the cow cannot get into the barn.

28. What is the median of the data set {2, 5, 3, 2, 7, 6, 5, 2, 2, 4, 7}?

29. What is the sum of the first six terms of the arithmetic sequence with first term 7 and common difference 8? (7, 15, 23, . . .)

30. If the angles in a triangle have measures (x+10)°, (2x+20)°, and (2x)°, find the measure of the smallest angle.