2008 Rocket City Junior Math Mania
Individual Test – 4th Grade

1. Evaluate: $8\overline{)1112}$

2. A right triangle has an area of 32 cm^2 and a leg measuring 4 cm. What is the length, in centimeters, of the other leg?

3. How many ways are there to arrange the letters in the word "SASSY"?

4. What is the area, in square centimeters, of a circle with a radius of 11 cm?

5. What is the largest multiple of 6 less than 1000?

6. What is the sum of 1.23 and 45.6, expressed as a decimal?

7. If the sum of two numbers is 247 and one is 111 less than the other, what is the value of the smaller number?

8. What is the largest prime number less than 100?

9. How many sides does a nonagon have?

10. What is the mode of the data set $\{1,1,1,1,2,2,3,3,3,4,5,5,5,6,6,94\}$?

11. Express 78.9012 in scientific notation.

12. If six Turnips can be exchanged for either five Umbrellas or four Violins, how many Violins would be equivalent to 200 Umbrellas?

13. What value(s) of *n* satisfy $2n-9=4n+53$?

14. How many diagonals can be drawn in a convex octagon?

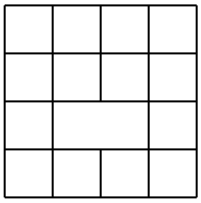
15. What is the sum of the counting numbers from 1 to 99 inclusive?

16. Evaluate: 3^5

17. At the Dude Ranch, a corral contains cowpokes (people) and horses. If there are a total of 84 heads and 312 feet, how many cowpokes are in the corral?

18. What is the distance between the points (5,9) and $(5,3)$?

19. How many squares of any size can be found in the grid of unit squares shown missing one segment?



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20. A right triangle has a hypotenuse measuring 16 cm and a leg measuring 12 cm. What is the length, in centimeters, of the other leg?

21. What is the sum of the number of months in a year, the number of sides on a heptagon, and the number of faces on a cube?

22. If Abigail is currently five times as old as Vivian, and in nine years she will only be twice as old as Vivian, how old is Abigail now?

23. What is the least common multiple of 6 and 8?

24. Evaluate: $34^2 - 23^2$

25. What is the surface area, in square centimeters, of a cube with edges measuring 4 cm?

26. 32 is what percent of 20?

27. When the digits of a positive two-digit integer are reversed, the new positive two-digit integer is 27 less than the original. What is the smallest possible value of the original number?

28. A triangle with sides measuring 5, 6, and 8 cm is similar to a triangle with sides measuring 3, 4, and x cm. What is the value of x?

29. When two fair, six-sided dice are rolled, what is the probability that the sum of the numbers shown is eleven?

30. How many unit cubes were used to build the stack shown?