2011 RC Jr. Math Mania
Individual Test – 5th Grade

1. Evaluate: $12\overline{)156}$

2. How many of these numbers are divisible by two? 12, 21, 35, 49, 57, 63, 79, 88, 96

3. How many vertices does a cube have?

4. How many positive integers are factors of 40?

5. What is the area, in square meters, of a rectangle with sides measuring 15 m and 9 m?

6. What is the perimeter, in **feet**, of a regular octagon with sides measuring 24 inches?

7. In how many unique ways can the letters in the word "MOON" be arranged?

8. What is the sum of three thousand twenty-four and one hundred thirty-seven?

9. What is the mode of the data set {1, 3, 5, 1, 7, 5, 2, 7, 5, 6, 3, 5, 7}?

10. If a football field is 100 yards long, there are three feet in a yard, and 12 inches in a foot, then how many feet are in 1 ½ football fields?

11. What is the sum of the positive integers from 31 to 50?

12. If Harry drives at a rate of 70 miles per hour for 12 hours, how many miles does he drive?

13. Find b if: $6b - 5 = 49$?

14. Josh is selling raffle tickets for a school fundraiser. The number of tickets sold each day and the cumulative totals are shown. Find the value of a + b + c.

Day	Tickets	Cumulative Total
Monday	13	13
Tuesday	a	32
Wednesday	17	b
Thursday	c	54

15. Evaluate: 3^5

16. When a certain number is decreased by 15 and this result is divided by four, the answer is 31. What is this special number?

17. What is the measure of an angle complementary to a $52°$ angle?

18. James' school day starts at 8:00 am. He has seven classes lasting 45 minutes each, one class lasting 30 minutes, homeroom lasting 10 minutes, and 30 minutes for lunch. If he has 5 minutes between each activity, what time does he get out of school?

19. 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?

20. How many diagonals can be drawn in a regular octagon?

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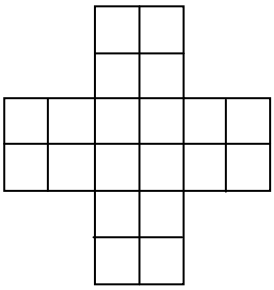
21. A bag of marbles contains nine red marbles, seven white marbles, and two blue marbles. When a single marble is drawn, what is the probability that the marble is not red?

22. Evaluate: $\frac{3}{4} \times \frac{14}{27}$

23. Simplify by combining like terms: $4d + 8 - d + 3d + 7 - d + 6d - 1$

24. My piggy bank contains only dimes and quarters, and contains 32 coins worth a total of $4.25. How many dimes are in the piggy bank?

25. How many squares of any size are in the figure?



26. When a positive two-digit integer is reversed to produce a new positive two-digit integer, the result is 45 less than the original number. What is the second-largest possible value of the original number?

27. What number is ¾ of 100 plus ½ of 54 minus 1/3 of 66?

28. 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?

$$\begin{array}{r} ABC \\ -DB \\ \hline DD \end{array}$$

29. If a supercomputer with three RX7 processors can perform 48 million operations per second, how many seconds would it take a supercomputer with only one RX7 processor to perform 24 million operations?

30. The area of a triangle is found using the formula $A = \frac{1}{2} \times \text{base} \times \text{height}$.

What is the area of the shaded part of the figure (assume all the squares are the same size)?