Math Olympiad Beginner
Homework 3

Name _____

1. A fisherman sold some big fish at $4 each and twice as many small fish at $1 each. He received a total of $72 for the big and small fish. How many big fish did he sell?

2. In a math contest of 10 problems, 5 point was given for each correct answer and 2 points was deducted for each incorrect answer. If Nancy answered all 10 problems and scored 29 point, how many correct answers did she have?

3. At post office, a person spent a total of $2.00 to get some 29 cents-stamps and some 5 cent-stamps, and received no change. How many 5 cents-stamps did the person buy?

4. A restaurant has a total of 30 tables which are of two types. The first type seats two people at each table; the second type seats five people at each table. A total of 81 people are seated when all seats are occupied. How many tables for two are there?

5. Henry was able to buy some 23 cents-stamps and some 15 cent-stamps for a total of exactly $2.50. How many 15 cent-stamps did he buy?

6. A group of 30 bikers went on a trip. Some rode bicycles and the other rode “tendems”. (A tandem is a bicycle that is ridden by 2 people at the same time.). If the total number of bicycles and tandems was 23, how many tandems were used?

7. 3x3, 3x3x3, and 3x3x3x3 are “multiplication strings” of 3s, three 3s and four 3s respectively. When each string multiplication is done, 3x3 ends in 9, 3x3x3 ends in 7, and 3x3x3x3 ends in 1. In what digit will a multiplication string of thirty-five 3s end?

8. Consecutive numbers are counting numbers that follow in order as in 7, 8, 9, 10, and so forth. Suppose the average of 15 consecutive numbers is 15. What is the average of the first five numbers of the set?

9. 1^2 means 1 x 1, 2^2 means 2 x 2, 3^2 means 3 x 3, and so forth.

   $1^2 + 2^2 + 3^2 + 4^2 + \ldots\ldots\ldots + 25^2 = 5525$, and

   $2^2 + 4^2 + 6^2 + 8^2 + \ldots\ldots\ldots + 50^2 = N$

   Find the value of N.

10. The sum of the first 25 multiples of 4 is: 4 + 8 + 12 + …..... + 100.

    The sum of of the first 25 multiples of 3 is: 3 + 6 + 9 + …..... + 75

    What number is equal to the difference of the two numbers?

11. What is the unit digit of 7^{95}?

12. How many even numbers between 1 and 101 are multiples of 3?