

Program Name: Prof Ved's Olympiad Program Grade 5&6

Worksheet Name: Arithmetic and Number Sense Worksheet 1 Questions

Name: _____

Date: _____

1.

In the World of Numbers, there are many number-machines, which work in the following way: the machine adds the two beginning digits of the number and replaces them by their sum. For example, beginning with the number 87312 and using six such machines we obtain:

$$87312 \rightarrow 15312 \rightarrow 6312 \rightarrow 912 \rightarrow 102 \rightarrow 12 \rightarrow 3$$

How many such machines should be used in order to get the number $\underbrace{9\dots9}_{50 \text{ times}}$ from the number $\underbrace{9\dots9}_{100 \text{ times}}$?

(A) 50

(B) 60

(C) 100

(D) 80

(E) Not possible to obtain this number

2.

The sum of the ages of Kate and her mother is 36, and the sum of the ages of her mother and her grandmother is 81. How old was the grandmother when Kate was born?

(A) 28

(B) 38

(C) 45

(D) 53

(E) 56

3.

Annie replaced the letters with numbers in the word KANGAROO (identical letters with the same digits, different letters with different digits) so that she got the largest possible 8-digit number, which is not a multiple of 4. What is the sum of the last three digits replacing the word ROO?

- (A) 13 (B) 14 (C) 12 (D) 15 (E) 11

4.

Nick wants to arrange the numbers 2, 3, 4, ..., 10 into several groups such that the sum of the numbers in each group is the same. What is the largest number of groups he can get?

- (A) 2 (B) 3 (C) 4 (D) 6 (E) other answer

5.

If A, B, C are distinct digits, which of the following numbers **cannot** be the largest possible 6-digit number written using three digits A, two digits B, and one digit C?

- (A) AAABBC (B) CAAABB (C) BBAAAC (D) AAABCB (E) AAACBB

profved.com