Answer on Question #42618 – Math - Combinatorics | Number Theory

How many numbers can be formed using 0, 3, 5, 6 and 7 which are less than 1000 and divisible by 5?

Solution:

Numbers must be less than 1000, thus we have 1,2 and 3 digit numbers.

1) Three digit's number:

    First digit cannot be zero, so the number of choices only **4** $(3, 5, 6, 7)$
    The last digit can be pick from
    0 or 5 (because only numbers which ended on 0 and 5 is divisible by 5), so the number of choices only **2.**
    Second digit can be any of the numbers $(0, 3, 5, 6, 7)$, so the number of choices is **5**.

    The total number of choices for 3 digits numbers is:
    $$4 \cdot 2 \cdot 5 = 40$$

2) Two digit's number.

    As like above, first digit cannot be zero. Number of choices is 4.
    The second digit must be 0 or 5. So, 2 choices.

    The total number of choices for 2 digits numbers is :
    $$4 \cdot 2 = 8$$

3) One digit number.

    There are only two such numbers – 0 and 5.

The total number of choices is:
$$40 + 8 + 2 = 50$$

Answer: 50 numbers.