

- a. For the left-most digit we can pick a digit between 1 and 9, for the other four digits we can pick a digit between 0 and 9.

$$N = 9 * 10 * 10 * 10 * 10 = 9 * 10^4 = 90000$$

- b. To get the amount of numbers with 5 digits and with at least one even digit we can calculate how many 5 digits numbers have no even digits then subtract them from the total amount of numbers:

For all the five digits we can pick: 1,3,5,7,9.

So the amount of numbers with 5 digits and without even digits is:

$$M = 5 * 5 * 5 * 5 * 5 = 5^5 = 3125$$

Then the amount of numbers with 5 digits and with at least one even digit is:

$$N - M = 90000 - 3125 = 86875$$