

7.

Answer

There are 9 two-digit palindromic numbers:

11, 22, 33, 44, 55, 66, 77, 88, 99 1

Each of these can be used to start a list of 11 palindromic numbers that start and end with the same digits:

11, 101, 111, 121, 131, 141, 151, 161, 171, 181, 191 1
 22, 202, 212, 222, 232, 242, 252, 262, 272, 282, 292
 And so on.

Total number of palindromic numbers between 10 and 1000 = $9 \times 11 = 99$

Answer: 99 1

Total: 3

Method

Start by looking at the two-digit numbers.

These can only be 11, 22, 33, 44, 55, 66, 77, 88 and 99

There are nine of these.

If you start with 11, you can write down the following two- and three-digit numbers that all start and end in 1:

11, 101, 111, 121, 131, 141, 151, 161, 171, 181, 191

You can do the same for 22, writing down all the numbers that start and end in 2:

22, 202, 212, 222, 232, 242, 252, 262, 272, 282, 292

There is no need to write down any more as they follow a pattern: for each pair of digits, there is a list of 11 numbers that start and end with those digits.

Total number = $9 \times 11 = 99$

Top Tip

Learn the word palindrome, meaning something that reads the same forwards or backwards. Here it is used to refer to numbers, e.g. 363. However, you will come across in in English too, e.g. radar, civic and level are all palindromic words.