A prime number is a whole number greater than 1 that has only two factors, itself and 1. For example, 13 is a prime number since the only factors of 13 are 13 and 1.

M and N are two different single digit numbers from the set 2, 3, 4, 5, 6, 7, 8, 9, so that

- One of M or N is a prime number, and the other is not a prime number,
- One of M or N is an even number, and the other is an odd number, and
- If you add the two digit numbers MN and NM, their sum is KK, where K is another prime number.

a) Which of the single digit numbers 2, 3, 4, 5, 6, 7, 8, 9 are prime, and which are not prime?

b) Find all solutions for M and N?