



## Problem of the Week

### Problem B

### Digital Reflections

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**?

