

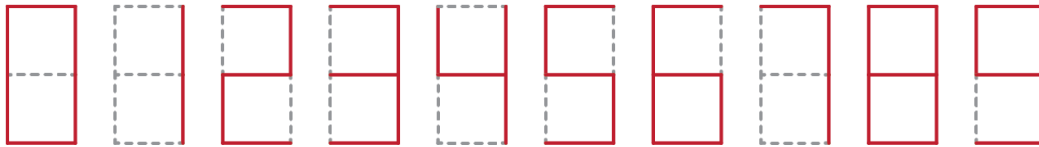


Problem of the Week

Problem D

The Clock Works

Halina's clock uses a digital LED display where each digit is represented by seven LED segments that are either on or off, as shown.



Sometimes some of the LED segments stop working. When the top-most horizontal LED segment stopped working, both the digit 1 and the digit 7 appeared as shown. This was a problem because Halina couldn't distinguish between them.



Halina replaced the broken LED segment, but then a week later found that a different LED segment had stopped working. However, this time, she was still able to distinguish between all ten digits.

What is the largest number of LED segments that can be broken at the same time, while still allowing Halina to distinguish between all ten digits?

This problem was inspired by a past [Beaver Computing Challenge \(BCC\)](#) problem.