**Solutions to MAKO 2017 Puzzles**

A Shadow Puzzle

The length of the rod is $\sqrt{55}$.

Ones and Twos

The smallest multiple of 9 is 12222 and the smallest multiple of 99 is 1122222222.

A Square with Four Semicircles

The ratio is $\sqrt{3}-1$.

A Digital Dilemma

- There are a total of 5888896 digits.
- There are 488895 zeroes.
- The millionth digit is 1.