



Bilkent University  
Department of Mathematics

## PROBLEM OF THE MONTH

**Term:** October 2024

We say that a positive integer  $k$  is *nice* if there is a positive integer  $n$  having exactly  $k$  positive divisors  $d_1, \dots, d_k$  such that  $d_i \not\equiv d_j \pmod{k+1}$  for all  $i \neq j$ . Find all nice numbers.