**Bilkent University
Department of Mathematics**

Problem Of The Month

Term: July-August 2016

Find all functions $f : \mathbb{Z}^+ \to \mathbb{Z}^+$ satisfying

$$f(mn) = f(m)f(n) \quad \text{and} \quad m + n \mid f(m) + f(n)$$

for all $m, n \in \mathbb{Z}^+$.