



Bilkent University  
Department of Mathematics

## PROBLEM OF THE MONTH

**Term:** May 2022

Let  $x, y, z$  be three positive real numbers satisfying

$$xyz = 1 \quad \text{ve} \quad \frac{y}{z}(y - x^2) + \frac{z}{x}(z - y^2) + \frac{x}{y}(x - z^2) = 0.$$

Let  $t_1, t_2$  and  $t_3$  be the smallest, the median and the largest of these three numbers, respectively. Find the smallest possible value of

$$\frac{t_1 + t_3}{t_2}.$$