University of Colorado
Department of Mathematics
Problem of the Month
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You have n positive real numbers satisfying

$$\begin{aligned} x_1 + \cdots + x_n &\leq 300, \\ x_1^2 + \cdots + x_n^2 &\geq 10,000. \end{aligned}$$

Show that there exist three of them such that the sum of those three is at least 100.