If $a, b, c > 0$, $ab + bc + ca = abc$ then:

$$\frac{a^4 + b^4}{ab(a^3 + b^3)} + \frac{b^4 + c^4}{bc(b^3 + c^3)} + \frac{c^4 + a^4}{ac(c^3 + a^3)} \geq 1$$

Proposed by Nguyen Hung Cuong-Vietnam

Solution by Tapas Das-India

$$\frac{a^4 + b^4}{ab(a^3 + b^3)} + \frac{b^4 + c^4}{bc(b^3 + c^3)} + \frac{c^4 + a^4}{ac(c^3 + a^3)} \overset{CEBYSHEV}{\geq}$$

$$\geq \sum \frac{1}{2} \frac{(a + b)(a^3 + b^3)}{ab(a^3 + b^3)} \geq \frac{1}{2} \sum \frac{a + b}{ab} = \sum \frac{1}{a} = \frac{\sum ab}{abc} = 1$$

Equality holds for: $a = b = c$.