

Mutassuk meg, hogy ha $x + y + z = 0$, akkor fennáll

$$(\alpha) \quad 2(x^4 + y^4 + z^4) = (x^2 + y^2 + z^2)^2;$$

$$\begin{aligned} (\beta) \quad & \frac{x^5 + y^5 + z^5}{(x^2 + y^2 + z^2)(x^3 + y^3 + z^3)} + \frac{x^7 + y^7 + z^7}{(x^3 + y^3 + z^3)(x^4 + y^4 + z^4)} = \\ & = \frac{(x^3 + y^3 + z^3)(x^4 + y^4 + z^4)}{(x^2 + y^2 + z^2)(x^5 + y^5 + z^5)} + \frac{(x^2 + y^2 + z^2)(x^7 + y^7 + z^7)}{(x^4 + y^4 + z^4)(x^5 + y^5 + z^5)} = 2. \end{aligned}$$