$\mathscr{PAHdJ}|f|$

Problem 1. Find all functions $f : \mathbb{R} \to \mathbb{R}$ such that $f(0) \neq 0$ and

$$f(x+y)^2 = 2f(x)f(y) + \max\big\{f(x^2) + f(y^2), f(x^2+y^2)\big\}$$

for all $x, y \in \mathbb{R}$.

$$\binom{n}{3}$$

Solution. We claim:

Remark 1.1. $u \leqslant T \implies T$

Remark 1.1. T

Crap Answer

This is another Put $x = y = 0$, we have $f(0)^2 = 2f(0)^2 + \max\{2f(0), f(0)\}$. If $f(0) > 0$, then $-f(0)^2 = 2f(0)$, but that is a contradiction. If $f(0) < 0$, then $-f(0)^2 = f(0)$ implies $f(0) = -1$.

HELLO HELLO **Abc**

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If we put $y = 0$, $f(x)^2 = -2f(x) + \max\big\{f(x^2) - 1, f(x^2)\big\} = -2f(x) + f(x^2)$. This is equivalent to $(f(x)+1)^2 = f(x^2) + 1$.

- **Case 1.** dlkfj ldj fl

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  dff

- **Case 2.** dfd

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