Problem

Let $f\colon \mathbb{R} \to \mathbb{R}$ be a nonzero function with $f'''(x) = f(x)$ and $f(0) + f'(0) + f''(0) = 0$. Show that $|f(x)| + |f'(x)| + |f''(x)|$ is a monotone decreasing function.

(Math Problem of the Week, 7/6/97)
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