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On the equal variables method applied to real variables

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ABSTRACT.

As it is known, the equal variables method can be used to create and solve difficult symmetric inequalities in nonnegative variables involving the expressions $x_1+x_2+\cdots+x_n$, $x_1^k+x_2^k+\cdots+x_n^k$ and $f(x_1)+f(x_2)+\cdots+f(x_n)$, where k is a real constant, and f is a differentiable function on $(0,\infty)$ such that $g(x)=f'(x^{\frac{1}{k-1}})$ is strictly convex. In this paper, we extend the equal variables method to real variables.

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