Name: _____ Mark: _____

**Mini-math Div 3/4: Monday, November 16, 2020 (10 minutes)**

(1) True or false: If $f(x)$ is defined on $[a, b]$ and $x = c \in (a, b)$ is a global maximum, then it is a local maximum.

(2) True or false: If $f(x)$ is defined on $[a, b]$, then it must have a global maximum on $[a, b]$.

(3) True or false: If $f(x)$ is continuous and defined on $(a, b)$, then it must have a global maximum on $[a, b]$.

(4) (2 marks) Consider the function $f(x) = \dfrac{x^2 + 3}{x - 1}$. Find the intervals on which $f$ is increasing.