

Math 131  
Warm-up 27

Name:

Let  $f$  and  $g$  be continuous functions from the interval  $[a, b]$  to  $\mathbb{R}$ . Suppose that for all  $x \in [a, b]$ ,  $f(x) < g(x)$ . Prove that there is an  $\alpha < 1$  such that for all  $x \in [a, b]$ ,  $f(x) < \alpha g(x)$ .