

This quiz is worth 10 points, and you have 10 minutes to complete it.

Calculators are NOT allowed today.

1. (2 pts) Complete the following sentence with a precise mathematical definition (NOT just an intuitive description):

A function f has a *global maximum* at $x = c$ if:

2. (8 pts) For each part below, sketch the graph of a function that has the given properties. There may be more than one possible answer for each graph. Make sure the features of your graph are clearly labeled, and don't make your graphs too small!

(a) A function $f(x)$ that is one-to-one with domain $[-1, 1)$ and range $(-\infty, 3]$.

(b) A function $f(x)$ with $\lim_{x \rightarrow 3^-} f(x) = 2$, $\lim_{x \rightarrow 3^+} f(x) = 4$, and $f(3) = 1$.