

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

Calculators ARE allowed today.

1. (10 pts) Determine whether the following statements are true (T) or false (F).
- (a) **T F** The limit of a function $f(x)$ as $x \rightarrow c$ is equal to $f(c)$.
 - (b) **T F** If $\lim_{x \rightarrow c} f(x) = 0$ and $\lim_{x \rightarrow c} g(x) = 0$, then $\lim_{x \rightarrow c} \frac{f(x)}{g(x)}$ is equal to 1.
 - (c) **T F** If $\lim_{x \rightarrow c} f(x) = 0$ and $\lim_{x \rightarrow c} g(x) = 0$, then $\lim_{x \rightarrow c} \frac{f(x)}{g(x)}$ does not exist.
 - (d) **T F** $f(x) = \frac{1}{x}$ is continuous at $x = 0$.
 - (e) **T F** $f(x) = \frac{1}{x}$ is continuous on $(-\infty, \infty)$.
 - (f) **T F** $f(x) = \frac{1}{x}$ is a continuous function.
 - (g) **T F** If f changes sign at $x = 2$, but $f(2) \neq 0$, then f is discontinuous at $x = 2$.
 - (h) **T F** If f is continuous on the interval $(2, 4)$, then f must have a maximum value and a minimum value on $(2, 4)$.
 - (i) **T F** If f is continuous everywhere, and if $f(0) = -2$ and $f(4) = 3$, then f must have exactly one root in $(0, 4)$.
 - (j) **T F** If f is continuous everywhere, $f(0) = 0$, $f(6) = 0$, and $f(2) > 0$, then f is positive on the entire interval $(0, 6)$.