What you'll Learn About
- One-Sided and Two Sided Limits
- Properties of Limits

x → 1
y →
The answer to a limit is the y-value
as \( \lim_{x \to 1^-} f(x) = 2 \)
The limit of the function as x approaches 1 from the left side of the graph

Jump Discontinuity
- left and right limits are different
Removeable Discontinuity
- there is still a limit at x=2

Continuity = Continuous Function

True/False

1) \( \lim_{x \to 1^-} f(x) \) exists at every c between (-1,1)
2) \( \lim_{x \to 1^-} f(x) \) exists at every c between (1,3)
3) \( \lim_{x \to 1^-} f(x) \) exists at any x-value between x=1 and x=3

False, b/c of jump at x=1

a) \( \lim_{x \to 1^-} f(x) = 2 \)
b) \( \lim_{x \to 1^+} f(x) = 4 \)
c) \( \lim_{x \to 1} f(x) = \text{DNE} \)
d) \( f(1) = 1 \)
e) \( \lim_{x \to 0^-} f(x) = 0 \)
f) \( \lim_{x \to 0^+} f(x) = 0 \)
g) \( \lim_{x \to 0} f(x) = 0 \)
h) \( f(0) = 0 \)
i) \( \lim_{x \to 2^-} f(x) = 1 \)
j) \( \lim_{x \to 2^+} f(x) = 1 \)
k) \( \lim_{x \to 2} f(x) = 1 \)