

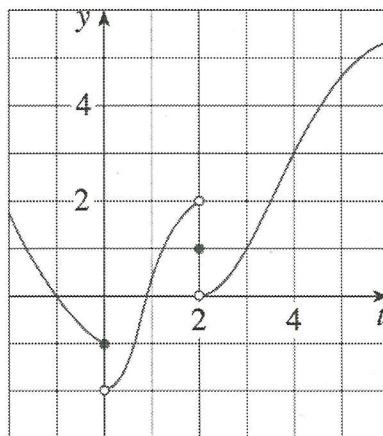
Math 1300-005 - Spring 2017

Introduction to Limits, Pt. II - 1/24/17

Solutions

Guidelines: Please work in groups of two or three. Please show all work and clearly denote your answer.

1. For the function f whose graph is given below, state the value of each quantity, if it exists. If it does not exist, *please explain why*.



(a) $\lim_{x \rightarrow 0^-} f(x) = -1$

(b) $\lim_{x \rightarrow 0^+} f(x) = 1$

(c) $\lim_{x \rightarrow 0} f(x)$ DNE

since

RHL \neq LHL

(d) $\lim_{x \rightarrow 2^-} f(x) = 2$

(e) $\lim_{x \rightarrow 2^+} f(x) = 0$

(f) $\lim_{x \rightarrow 2} f(x)$ DNE

since

RHL \neq LHL

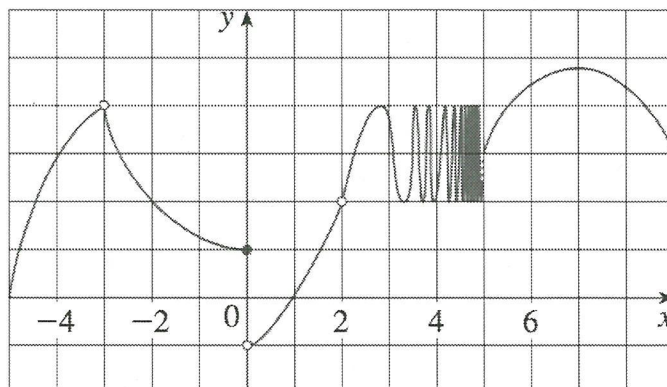
(g) $\lim_{x \rightarrow 4} f(x) = 3$

(h) $f(2) = 0$

since

RHL = 3 = LHL

2. For the function g whose graph is given below, state the value of each quantity, if it exists. If it does not exist, *please explain why*.



(a) $\lim_{x \rightarrow -3^-} g(x) = 4$

(b) $\lim_{x \rightarrow -3^+} g(x) = 4$

(c) $\lim_{x \rightarrow -3} g(x) = 4$

since

LHL = 4 = RHL

(d) $\lim_{x \rightarrow 0^-} g(x) = 1$

(e) $\lim_{x \rightarrow 0^+} g(x) = -1$

(f) $\lim_{x \rightarrow 0} g(x)$ DNE

since

RHL \neq LHL

(g) $\lim_{x \rightarrow 2} g(x) = 2$

even though

$g(2)$ is not defined!

(h) $\lim_{x \rightarrow 5^+} g(x)$ ³ ~~DNE~~

(i) $\lim_{x \rightarrow 5^-} g(x)$ DNE

due to the infinite
oscillations

(j) $g(-3)$ not defined

(k) $g(0) = 1$

(l) $g(2)$ Not defined