

Class Notes to Review for Chapter 2 Test

Chapter I Test covers all of the notecards (1 - 13) and be sure to study the starred problems EXTRA hard!!

1. Find a) $\lim_{t \rightarrow 1} \frac{t^2 - 3t + 2}{t^2 - 1}$

b) $\lim_{x \rightarrow \pi/2} \sec x$

c) $\lim_{x \rightarrow \infty} \frac{-x^2 - 5x + 12}{3x^4 + 8}$

2. State the
- a) vertical asymptotes
 - b) horizontal asymptotes
 - c) $\lim_{x \rightarrow \infty} g(x)$

for $y = \frac{x^3 + x}{2x^2 + 3x}$.

3. For $g(x)$ below, find

a) $\lim_{x \rightarrow -2} g(x)$

b) $\lim_{x \rightarrow 6^-} g(x)$

c) $\lim_{x \rightarrow -2^-} g(x)$

$$g(x) := \begin{cases} -x + 4 & x < -2 \\ 1 & x = -2 \\ \frac{3}{2}x^2 - 1 & x > -2 \end{cases}$$

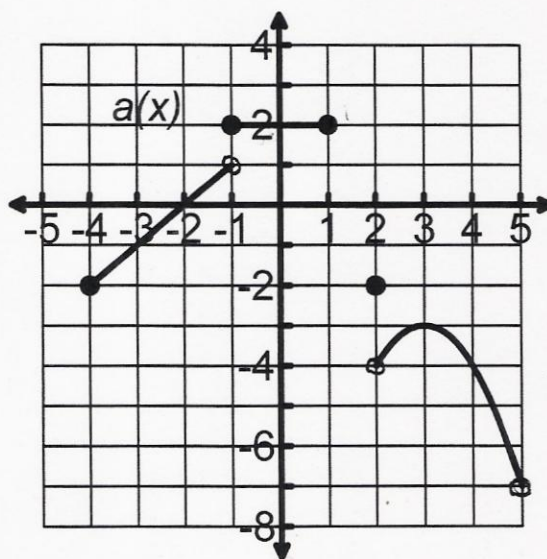
4. Using the graph of $h(x)$ to the right, find:

a) $\lim_{x \rightarrow 2^+} a(x)$

b) $\lim_{x \rightarrow -1/3} a(x)$

c) $\lim_{x \rightarrow -4} a(x)$

d) $\lim_{x \rightarrow -1^+} a(x)$



5. Let q be defined by the following,

$$q(x) := \begin{cases} x^2 - 1 & -1 \leq x < 0 \\ 2x & 0 \leq x \leq 1 \\ -2x + 4 & 1 < x < 3 \end{cases}$$

For what values of x is q not continuous?

Key

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1. Find a) $\lim_{t \rightarrow 1} \frac{t^2 - 3t + 2}{t^2 - 1}$

$\lim_{t \rightarrow 1} \frac{(t-2)(t-1)}{(t-1)(t+1)} = \frac{-1}{2}$

b) $\lim_{x \rightarrow \pi/2} \sec x$

Undefined

c) $\lim_{x \rightarrow \infty} \frac{-x^2 - 5x + 12}{3x^4 + 8} = 0$

2. State the a) vertical asymptotes

$x = -3/2$

b) horizontal asymptotes

none

c) $\lim_{x \rightarrow \infty} g(x)$ DNE

for $y = \frac{x^3 + x}{2x^2 + 3x}$

$y = \frac{x(x^2 + 1)}{x(2x + 3)}$

hole at $x = 0$

3. For $g(x)$ below, find

a) $\lim_{x \rightarrow -2} g(x)$ DNE
 $6 \neq 6 - 1$

b) $\lim_{x \rightarrow 6^-} g(x)$ 53

c) $\lim_{x \rightarrow -2^-} g(x)$ 6

$$g(x) := \begin{cases} -x + 4 & x < -2 \\ 1 & x = -2 \\ \frac{3}{2}x^2 - 1 & x > -2 \end{cases}$$

Key

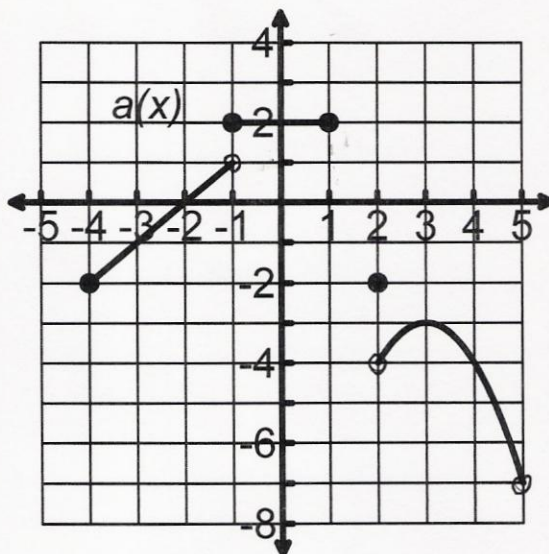
4. Using the graph of $h(x)$ to the right, find:

a) $\lim_{x \rightarrow 2^+} a(x) = -4$

b) $\lim_{x \rightarrow -1/3} a(x) = 2$

c) $\lim_{x \rightarrow -4} a(x) = \text{DNE}$

d) $\lim_{x \rightarrow -1^+} a(x) = 2$



5. Let q be defined by the following,

$$q(x) := \begin{cases} x^2 - 1 & -1 \leq x < 0 \\ 2x & 0 \leq x \leq 1 \\ -2x + 4 & 1 < x < 3 \end{cases}$$

For what values of x is q not continuous? 0

$f(0)$ is defined

$$0^2 - 1 = 2(0)$$

$$-1 \neq 0$$

$f(1)$ is defined

$$2(1) \stackrel{?}{=} -2(1) + 4$$

$$2 = -2 + 4 \checkmark$$