

Review #1 for Ch 2 Test

1) $f(x) = x^3 - 3x^2 + 3x - 1$

- a) Sketch $f(x)$
- b) Sketch $-f(x)$
- c) Sketch $|f(x)|$
- d) Sketch $f(1 \times 1)$
- e) $f(1)$
- f) Domain of f
- g) Range of f

2) $g(x) = \begin{cases} -x+5, & x < -1 \\ 3, & -1 \leq x < 3 \\ 2x+1, & x \geq 3 \end{cases}$

- a) Sketch $g(x)$
- b) Domain of g
- c) Range of g
- d) $g(3)$
- e) $g(-1)$
- f) $\lim_{x \rightarrow 3^+} g(x)$
- g) $\lim_{x \rightarrow 3^-} g(x)$
- h) $\lim_{x \rightarrow 3} g(x)$

3) $h(x) = \frac{|2-x|}{x-2}$

- a) Sketch $h(x)$
- b) $\lim_{x \rightarrow 2^+} h(x)$
- c) $\lim_{x \rightarrow 2^-} h(x)$

4) Find a δ if $\epsilon = .01$
 $\lim_{x \rightarrow 3} 2x - 5$

5) $f(x) = \frac{x^2 + x}{x}$ is defined and

continuous for all x except $x=0$. What value must be assigned to $f(x)$ for $x=0$ in order that the function be continuous there?

6) a) $\lim_{x \rightarrow 0} \frac{x}{-1 + \sqrt{1-x}} =$

b) $\lim_{x \rightarrow 1} 2x + 6 =$

c) $\lim_{x \rightarrow -2} 3x^3 - 2x + 7 =$

d) $\lim_{z \rightarrow 10} \frac{1}{z-10} =$

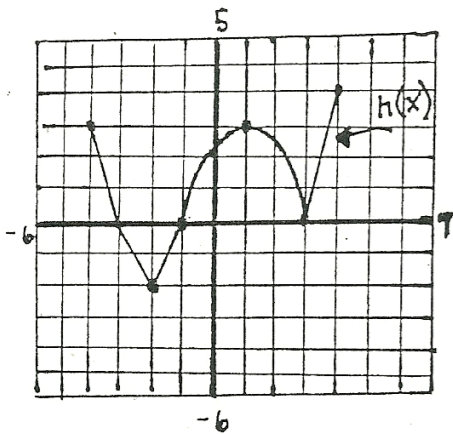
e) $\lim_{h \rightarrow 0} \frac{5 - \sqrt{25+h}}{h} =$

f) $\lim_{x \rightarrow 9} \frac{x-9}{\sqrt{x}-3} =$

g) $\lim_{x \rightarrow 0} \frac{x}{\sin x} =$

Review #2 - Calculus - Ch 2

Directions: Show all work on graph paper



- A) $h(-2)$
- B) $h(4)$
- C) For what values is $h(x) = 0$
- D) For what values is $h(x) = 3$
- E) Give coordinates of all absolute minimum pts
- F) Give coordinates of all relative minimum pts.
- G) Domain of $h(x)$
- H) Range of $h(x)$
- I) Sketch $|h(x)| - 2$
- J) Sketch $h(\frac{1}{2}x)$

2) $f(x) = |4x-1| - 2$
 Find $f(x+1) - f(x)$ as a piecewise function

3) Find Domain

$$g(x) = \frac{2x}{\sqrt{x^2-9}}$$

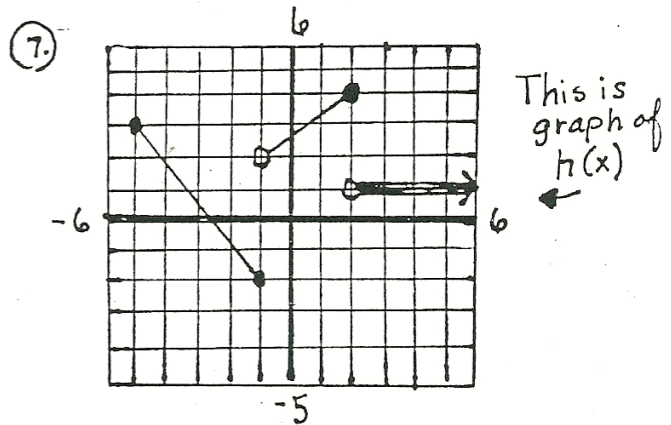
4. Definition of being continuous at a point c : _____

5. Formal Definition of a Limit : _____

6A) Write as a piecewise function :

$$g(x) = \frac{|5x-2|}{5x-2}$$

B) Graph :



A) Write a piecewise function $h(x)$

B) $\lim_{x \rightarrow -1^+} h(x) =$

C) $\lim_{x \rightarrow -1^-} h(x) =$

D) Domain of $h(x)$

E) Range of $h(x)$

Review #3

Calculus Review - Chapter 2 #3

1. Express each inequality using absolute value notation:

A) $y \geq 6$ or $y \leq -6$ _____

B) $x \geq 10$ or $x \leq -4$ _____

C) $-8 \leq x \leq -2$ _____

D) $[-5, 1]$ _____

E) $(-15, -3)$ _____

2. Given this Piecewise Function answer the questions below:

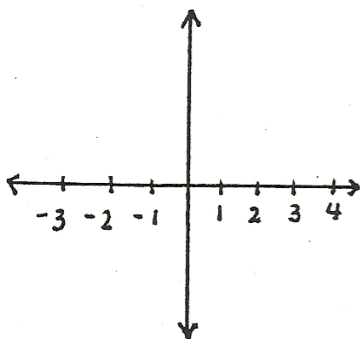
$$t(x) = \begin{cases} 2x^2 - 1, & x \leq -2 \\ 4, & -2 < x < 3 \\ \sqrt{x-3}, & x \geq 3 \end{cases}$$

A) $t(-4) =$

B) $t(4) =$

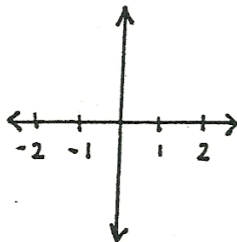
C) $t(0) =$

D) Graph $t(x)$



3.

$$g(x) = \begin{cases} 1, & x > 1 \\ 0, & x = 1 \\ 1, & x < 1 \end{cases}$$



A) Graph $g(x)$

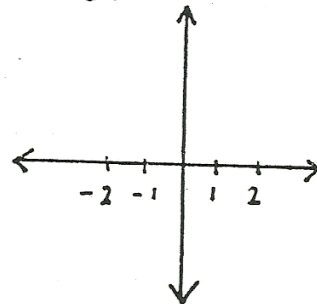
B) Where is g discontinuous?

C) Is the discontinuity removable? How?

4. $f(x) = \frac{x^2 - 1}{x - 1}$

A) Another way to write this $f(x)$ _____

B) Graph $f(x)$



C) Where is f discontinuous?

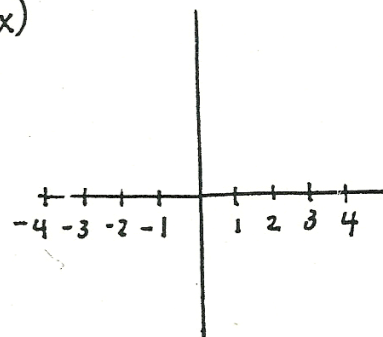
D) Is the discontinuity removable?

E) How?

5. $h(x) = \frac{x-3}{|x|-3}$

A) Write as a piecewise function

B) Graph $h(x)$



C) Where is h discontinuous?

D) Is the discontinuity removable?

E) Write the piecewise function where it is removable.