Review for Chapter 2 test

Calculus AP-AB

Cat # 8 (1) $f(x) = x^3 - 3x^2 - 1$

a) sketch f(x)
b) sketch -f(x)
c) sketch |f(x)|
d) sketch f(|x|)
e) find f(1)
f) state the domain of f
g) state the range of f

Cat # 1 (2.) $h(x) = \frac{|2 - x|}{x - 2}$

a) write a piecewise function and simplify
b) sketch h(x)
c) $\lim_{x \to 2^+} h(x)$
d) $\lim_{x \to 2^-} h(x)$
e) $\lim_{x \to 2} h(x)$
f) $h(2)$

Cat # 12 (3)

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

a) sketch g(x)
b) state the domain of g
c) state the range of g
d) find g(3)
e) $\lim_{x \to 3^+} g(x)$
f) $\lim_{x \to 3^-} g(x)$
g) $\lim_{x \to 3} g(x)$
h) g(-1)
i) $\lim_{x \to -1^+} g(x)$
j) $\lim_{x \to -1^-} g(x)$

Cat # 1 (4) A) $f(x) = \frac{x^2 + x}{x}$

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?

B) $\lim_{x \to 0} \frac{x}{-1 + \sqrt{1 - x}} =$

C) $\lim_{x \to 1} 2x + 6 =$

D) $\lim_{x \to -2} 3x^3 - 2x + 7 =$

E) $\lim_{z \to 10^-} \frac{1}{z - 10} =$

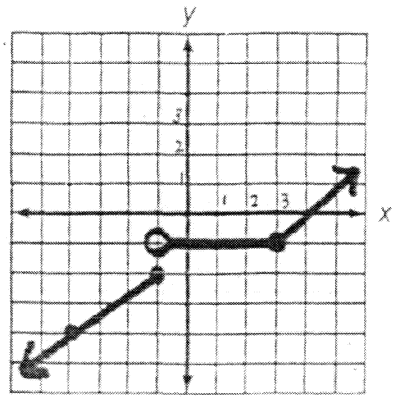
F) $\lim_{x \to 9} \frac{x - 9}{\sqrt{x} - 3} =$

G) $\lim_{x \to 0} \frac{x}{\sin x}$

H) $\lim_{x \to 0} \frac{\sin 2x}{\sin 6x}$

I) $\lim_{x \to 0} \frac{5 - \sqrt{25 + x}}{x}$

Cat # 8 (5) A) Write a piecewise function for f(x) as show below.



B) Write the domain of f.
C) Write the range of f.
D) f(-1) =
E) $\lim_{x \to -1^-} f(x) =$
F) $\lim_{x \to -1^+} f(x) =$
G) $\lim_{x \to -1} f(x) =$
H) $\lim_{x \to \infty} f(x) =$
I) $\lim_{x \to -\infty} f(x) =$
J) State the intervals on which f(x) is continous.

Cat # 1 (6) Write f(x) in piecewise form

A) $f(x) = 4 + |2x - 5|$

B) $f(x) = |3x - 2| - |2x + 4|$