Continuity & Continuous Functions

name _____

Cont&Contfuncts.doc 9/28/06

1. Give an informal description of a continuous function: No jumps or breaks

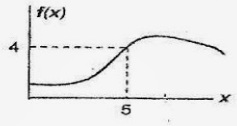
You can trace the graph without lifting your pencil!!

2. What is the technical definition for a function **f** to be continuous at $x = a$? Explain what is implied in this definition.

f is continuous at a point $x = a$ if and only if $\lim f(x) = f(a)$

**This means- 1) the limit must exist
2) f(a) must exist (a is in the domain of f)
3) the limit must equal f(a)

3.



What is $\lim_{x \to 5^+} f(x)$?

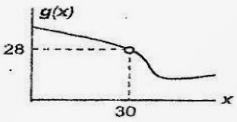
What is $\lim_{x \to 5^-} f(x)$?

What is $\lim_{x \to 5} f(x)$?

What is f(5) ?

Is **f** continuous at $x = 5$?

4.



$\lim_{x \to 30^+} g(x) =$

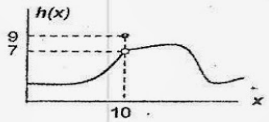
$\lim_{x \to 30^-} g(x) =$

$\lim_{x \to 30} g(x) =$

g(30) =

Is **g** continuous at $x = 30$?

5.



$\lim_{x \to 10^+} h(x) =$

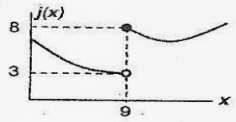
$\lim_{x \to 10^-} h(x) =$

$\lim_{x \to 10} h(x) =$

h(10) =

Is **h** continuous at $x = 10$?

6.



What is $\lim_{x \to 9^+} j(x)$?

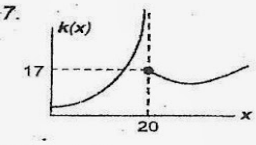
What is $\lim_{x \to 9^-} j(x)$?

What is $\lim_{x \to 9} j(x)$?

What is j(9) ?

Is **j** continuous at $x = 9$?

7.



What is $\lim_{x \to 20^+} k(x)$?

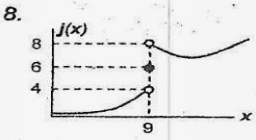
What is $\lim_{x \to 20^-} k(x)$?

What is $\lim_{x \to 20} k(x)$?

What is k(20) ?

Is **k** continuous at $x = 20$?

8.



What is $\lim_{x \to 9^+} j(x)$?

What is $\lim_{x \to 9^-} j(x)$?

What is $\lim_{x \to 9} j(x)$?

What is j(9) ?

Is **j** continuous at $x = 9$?