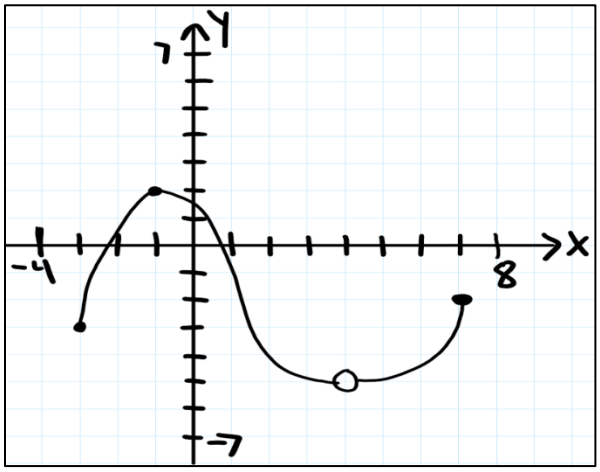
Calculus I: Chapter 1 Test Review **Name:** _____

1.)



A) $f(-1) =$

B) $f(4)=$

C) $\lim_{x\to 4} f(x)$

D) Domain

E) Range

F) $\lim_{x\to -1} f(x)$

G) Is $f(x)$ continuous at $x = -1$?

H) Is $f(x)$ continuous at $x = 4$?

Evaluate the Limit

2.)

A) $\lim_{x\to -6} -4x + 1$

B) $\lim_{x\to 7} 11$

C) $\lim_{X\to 9} \frac{2x^3-1}{2}$

D) $\lim_{x\to 5} \frac{2x-3}{x+5}$

Evaluate the Limit

3.) $\lim_{x\to 12} \frac{x^2-144}{x-12}$

4.) $\lim_{x\to 3} \frac{x^2-9}{x^2+3x-18}$

5.) $\lim_{x\to -1} \frac{\sqrt{x+5}-2}{x+1}$

6.) $\lim_{x\to 12} \frac{\frac{-3}{x-3}+\frac{4}{x}}{x-12}$

7.) $\lim_{x\to 0} \frac{7sinx}{x}$

8.) $\lim_{x\to 0} \frac{1-cos6x}{x}$

9.) $\lim_{x\to 0} \frac{\sin^2 3x}{2x}$

10.) $\lim_{x\to 0} \frac{7tan2x}{3x}$

11.) $\lim_{x\to 0} \frac{2tanx}{3sinx}$

Is $f(x)$ continuous?

12.) $f(x) = \begin{cases} 3x-7, & x \le 4 \\ 2x-1, & x > 4 \end{cases}$

13.) $f(x) = \begin{cases} x^3+4, & x \le 1 \\ 6x-1, & x > 1 \end{cases}$

Find and classify all discontinuities.

14.) $f(x) = \frac{8x^2}{3x^3+x^2}$

15.) $g(x) = \frac{x^2-12x+27}{x^2-81}$

16.) $h(t) = \frac{t+3}{t^2+8t+15}$

Find *a* such that $f(x)$ is continuous.

17.) $f(x) = \begin{cases} 3x^2 - 2, & x \leq 4 \\ 2x + a, & x > 4 \end{cases}$

Evaluate the Limit and Find any Vertical Asymptote.

18.) $\lim_{x \to 9} \frac{1}{x-9}$

19.) $\lim_{x \to 3} \frac{7}{x^2-10x+21}$

20.) $\lim_{x \to 12} \frac{1}{(x-12)^2}$