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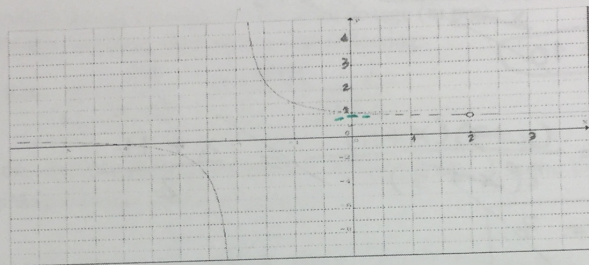
I. Write the letter of the correct answer on the line. (10 points each)

1. C Find  $\lim_{x \rightarrow \infty} (6 + \frac{1}{x^2})$

- A) 0      B)  $\infty$       C) 6      D) 1

2. A/B Use the following graph to determine  $\lim_{x \rightarrow \infty} f(x)$

10  
B) 1



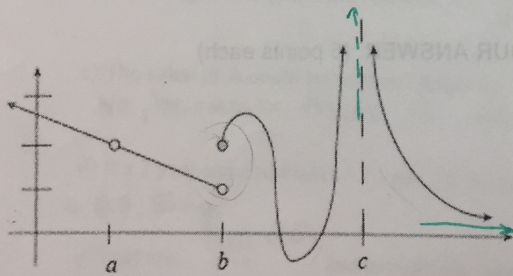
- A) 2      B) 1      C)  $1.8\infty$       D) 0

3. B Find  $\lim_{x \rightarrow 3} \frac{1}{(x-3)^2}$

- A)  $-\infty$       B)  $+\infty$       C) 0      D)  $\frac{1}{9}$

87.99	3	3.01
10,006		10,004

II. For the function  $f(x)$  whose graph is given, find the following limits (20 points)



a)  $\lim_{x \rightarrow +\infty} f(x) = \infty$  ~~0~~

b)  $\lim_{x \rightarrow -\infty} f(x) = \infty$

c)  $\lim_{x \rightarrow c} f(x) = \infty$  ~~0~~

d)  $\lim_{x \rightarrow b^-} f(x) = 1$

-10

a)  $\lim_{x \rightarrow +\infty} f(x) = 0$

b)  $\lim_{x \rightarrow c} f(x) = \infty$

**Instructions:** Solve the following exercises. Remember to write your solution procedure in an orderly fashion. (10 points each)

I. Find the following limits

$$1.- \lim_{x \rightarrow -2} \frac{3x^2 + 4x - 4}{2x^2 + 3x - 2} = \frac{(x+2)(x-2)}{(2x-1)(x+2)} = \frac{3x-2}{2x-1} = \frac{3(-2)-2}{2(-2)-1} = \frac{-8}{-5} = \frac{8}{5}$$

$\lim_{x \rightarrow -2} f(x) = \frac{8}{5}$

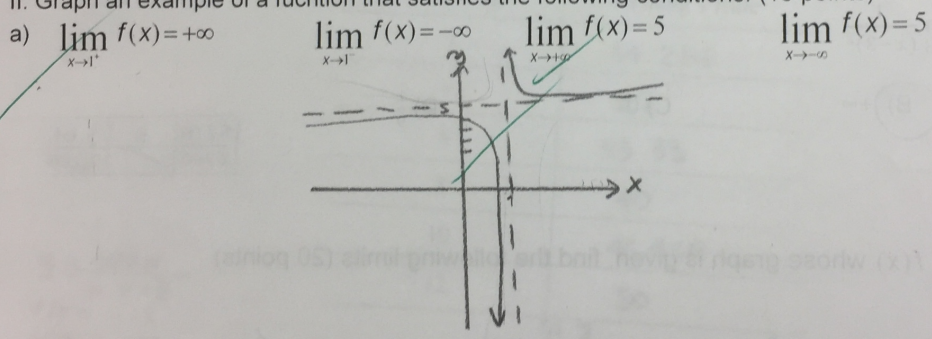
$$2.- \lim_{x \rightarrow 5} \frac{x^2 - 25}{x - 5} = \frac{(x-5)(x+5)}{x-5} = x+5$$

$\lim_{x \rightarrow 5} f(x) = 10$

$$3.- \lim_{x \rightarrow 3} \frac{x^2 + 14x + 33}{2x + 6} = \frac{(x+3)(x+11)}{2(x+3)} = \frac{x+11}{2}$$

$\lim_{x \rightarrow 3} f(x) = 7$

II. Graph an example of a function that satisfies the following conditions: (10 points)



III. Evaluate the following limits. **JUSTIFY** or **EXPLAIN YOUR ANSWER**. (5 points each)

a)  $\lim_{x \rightarrow \infty} \left( \frac{5-4x}{2x+3} \right) = -2$

$(x)n \neq \infty = \text{coefficients divides.}$

b)  $\lim_{x \rightarrow \infty} \left( \frac{4x-2}{x^3+5x} \right) = 0$

when the "x" of the numerator is less than the "x" of the denominator is equal to 0.