

## Day2 HW: Introduction to Limits Selected Solutions

1a.  $\lim_{x \rightarrow \pm\infty} f(x) = 0$        $\lim_{x \rightarrow 2^+} f(x) = \infty$

$\lim_{x \rightarrow 2^-} f(x) = \infty$        $\lim_{x \rightarrow 2} f(x) = \infty$

1b.  $f(x) = \frac{13}{(x-2)^2}$  Note: Numerator could be any POSITIVE number. I happen to have chosen 13.

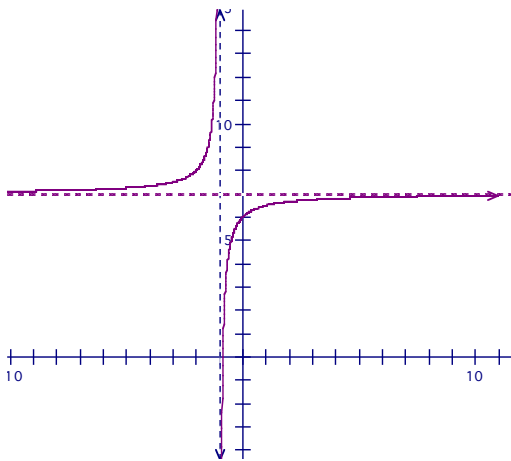
3a.

$\lim_{x \rightarrow \pm\infty} f(x) = 3$        $\lim_{x \rightarrow -\infty} f(x) = 3$        $\lim_{x \rightarrow 2^+} f(x) = \infty$

$\lim_{x \rightarrow 2^-} f(x) = -\infty$        $\lim_{x \rightarrow 2} f(x) = \text{NO LIMIT}$

3b. A general solution could be written as:  $y = \frac{k}{x-2} + 3$ . Then, plug the point (7, 4) into the equation to find the value of  $k$ .

5a.



6a.  $f(x) = \frac{-13}{x+1} + 7$  Note: The numerator could be any negative number. I just happened to choose -13.

8c. 9

9a. 5

9c. 1

9e.  $1/3$

9g. 10

9i. 1

9k. -2