Author 1 _____ Day 1☐ Day 2☐

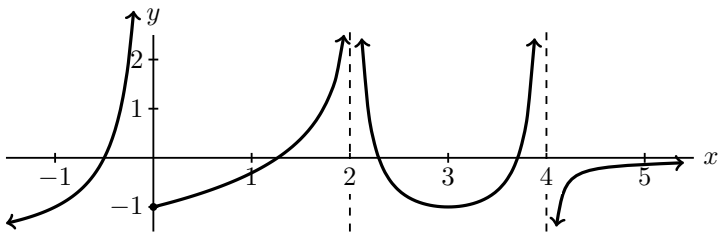
Author 2 _____ ☐ ☐

Author 3 _____ ☐ ☐

Author 4 _____ ☐ ☐

Group Work 03

1. Suppose the graph of a function $h(x)$ is given below. Find the value of each of the following below.



(a) $\lim_{x\to 0^-} =$

(b) $\lim_{x\to 0^+} =$

(c) $\lim_{x\to 0} =$

(d) $\lim_{x\to 2^-} =$

(e) $\lim_{x\to 2^+} =$

(f) $\lim_{x\to 2} =$

(g) $\lim_{x\to 4^-} =$

(h) $\lim_{x\to 4^+} =$

(i) $\lim_{x\to 4} =$

2. Let $f(x) = \dfrac{2x}{x-3}$.

(a) Find the following (by plugging in values for x closer and closer to 3). Explain your answers!

i. $\lim_{x\to 3^-} f(x) =$

ii. $\lim_{x\to 3^+} f(x) =$

iii. $\lim_{x\to 3} f(x) =$

(b) Is the line $x = 3$ an asymptote of the graph $y = f(x)$. Why or why not?

3. Determine if the following statements are True or False. Make sure to explain!

(a) $\dfrac{x^2 - x - 6}{x - 3} = x + 2$

(b) $\lim_{x\to 3} \dfrac{x^2 - x - 6}{x - 3} = \lim_{x\to 3} x + 2$

4. Let $f(x) = \dfrac{x^2 - x - 6}{x^2 - 9}$. Find all vertical asymptotes of the curve $y = f(x)$ (without graphing).

5. Compute the following limits without graphing.

(a) $\lim\limits_{x \to -1} \dfrac{2x^2 + 3x + 1}{x^2 - 2x - 3}$

(b) $\lim\limits_{x \to 3} \dfrac{\frac{1}{x} - \frac{1}{3}}{x - 3}$

(c) $\lim\limits_{h \to 0} \dfrac{(-3 + h)^2 - 9}{h}$