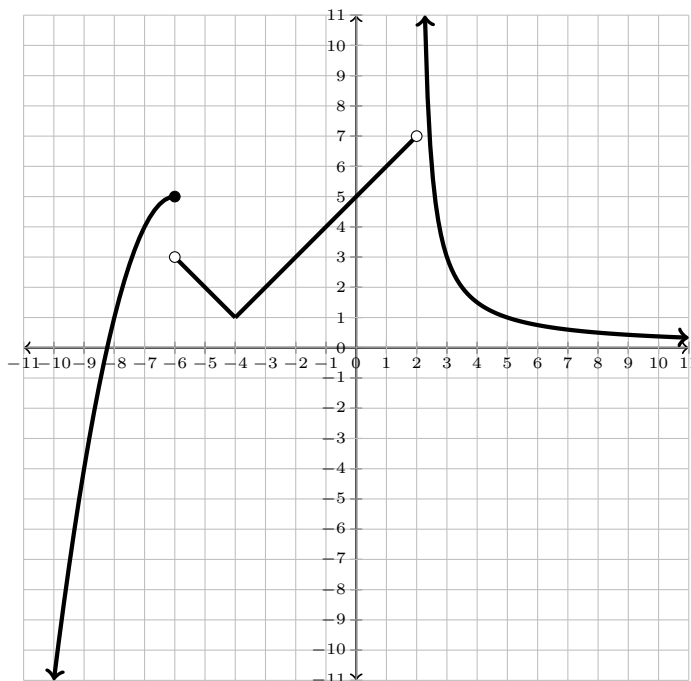


Name: \_\_\_\_\_

- Keep phones off and out sight.
- No calculators, notes, books, or other aids.
- Do not talk during the quiz.
- Show all work.

1. Shown below is the graph of a function  $f(x)$ . Use it to compute each limit or function value. For each limit, give a value if possible, or answer  $+\infty$ ,  $-\infty$ , or “DNE.”



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

(d)  $\lim_{x \rightarrow -6} f(x) =$  \_\_\_\_\_

(b)  $\lim_{x \rightarrow 2^+} f(x) =$  \_\_\_\_\_

(e)  $\lim_{x \rightarrow -4} f(x) =$  \_\_\_\_\_

(c)  $f(-6) =$  \_\_\_\_\_

(f) What is the domain of this function?

2. Compute each limit. Give a value if possible, or answer  $+\infty$ ,  $-\infty$ , or “DNE.”

(a)  $\lim_{x \rightarrow 1^+} \frac{x^2 - 2x + 5}{x - 1}$

(b)  $\lim_{x \rightarrow 2} \frac{x^2 - 4}{x^2 + x - 6}$

(c)  $\lim_{x \rightarrow -2} \frac{|x - 2|}{x^2 + 2}$

(d)  $\lim_{x \rightarrow 1} \frac{\sqrt{2x+7} - 3}{x^2 - 1}$

(e)  $\lim_{x \rightarrow 5} \frac{x^2 - x - 20}{|x - 5|}$

3. Let  $f(x) = \frac{1}{x^2}$ . Compute and simplify  $\frac{f(x+h) - f(x)}{h}$ .