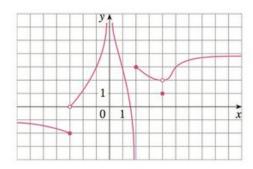Books, notes (in any form), and calculators are not allowed. *Show all your work.* Good Luck!

1. (5 pts) Given the graph of $f(x)$ above, state the value of each quantity below, if it exists. Clearly indicate $+\infty$ or $-\infty$ in the case of an infinite limit. If the quantity does not exist, state DNE.

(a). $f(2)$

(b). $\lim\limits_{x \to 0^+} f(x)$

(c). $\lim\limits_{x \to -3^+} f(x)$

(d). $\lim\limits_{x \to 4} f(x)$

2. (5 pts) Evaluate the following limit, if it exists. Clearly indicate $+\infty$ or $-\infty$ in the case of an infinite limit. If the limit does not exist, clearly explain the reason why.

$$\lim_{x \to 4} \frac{\frac{1}{x} - \frac{1}{4}}{x - 4}$$

3. (5 pts) Evaluate the following limit, if it exists. Clearly indicate $+\infty$ or $-\infty$ in the case of an infinite limit. If the limit does not exist, clearly explain the reason why.

$$\lim_{x \to -2} \frac{x^2 - 4}{x^2 - 2x - 8}$$