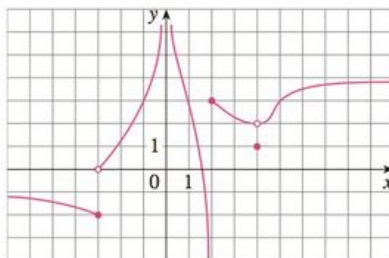Books, notes (in any form), and calculators are not allowed. *Show all your work.* Good Luck!

1. (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.

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

2. (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). $f(4)$

(b). $\lim_{x \to 2^-} f(x)$

(c). $\lim_{x \to 2^+} f(x)$

(d). $\lim_{x \to -3} f(x)$

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.

$$\lim_{x \to 3} \frac{1 - x}{(x - 3)^2}$$