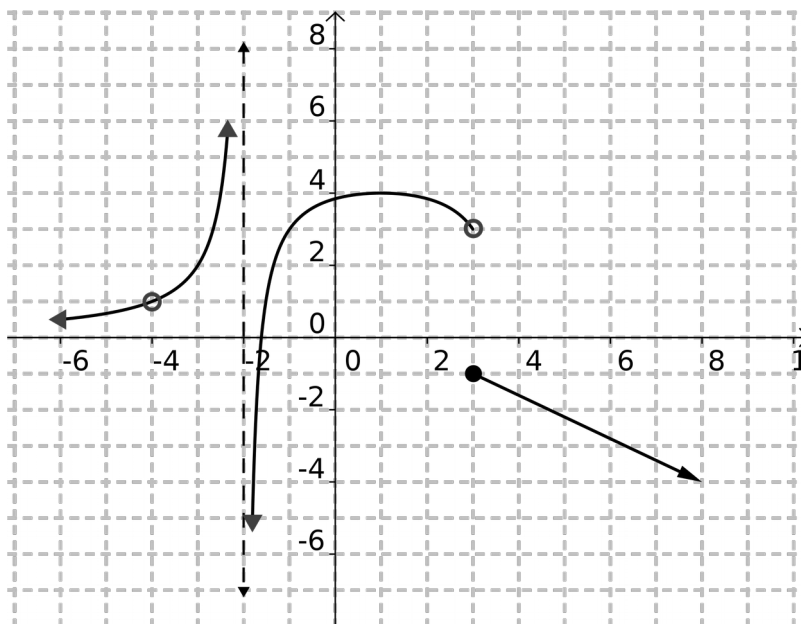Ex.1 Given the following graph, evaluate each limit (if possible).

Note: If the answer to the limit does not exist, we say $\lim\limits_{x \to a} f(x)$ DNE .

(a) $\lim\limits_{x \to -4^-} f(x)$

(b) $\lim\limits_{x \to -4^+} f(x)$

(c) $\lim\limits_{x \to -4} f(x)$

Summary:

(d) $\lim\limits_{x \to -2^-} f(x)$

(e) $\lim\limits_{x \to -2^+} f(x)$

(f) $\lim\limits_{x \to -2} f(x)$

Summary:

(g) $\lim\limits_{x \to 3^-} f(x)$

(h) $\lim\limits_{x \to 3^+} f(x)$

(i) $\lim\limits_{x \to 3} f(x)$

Summary:

Ex.2 Sketch a graph of the piecewise function and then find $\lim\limits_{x \to 1} f(x)$.

$$f(x)=\begin{cases} x-1 & \text{if } x<1 \\ 1 & \text{if } x=1 \\ 2+\sqrt{x-1} & \text{if } x>1 \end{cases}$$