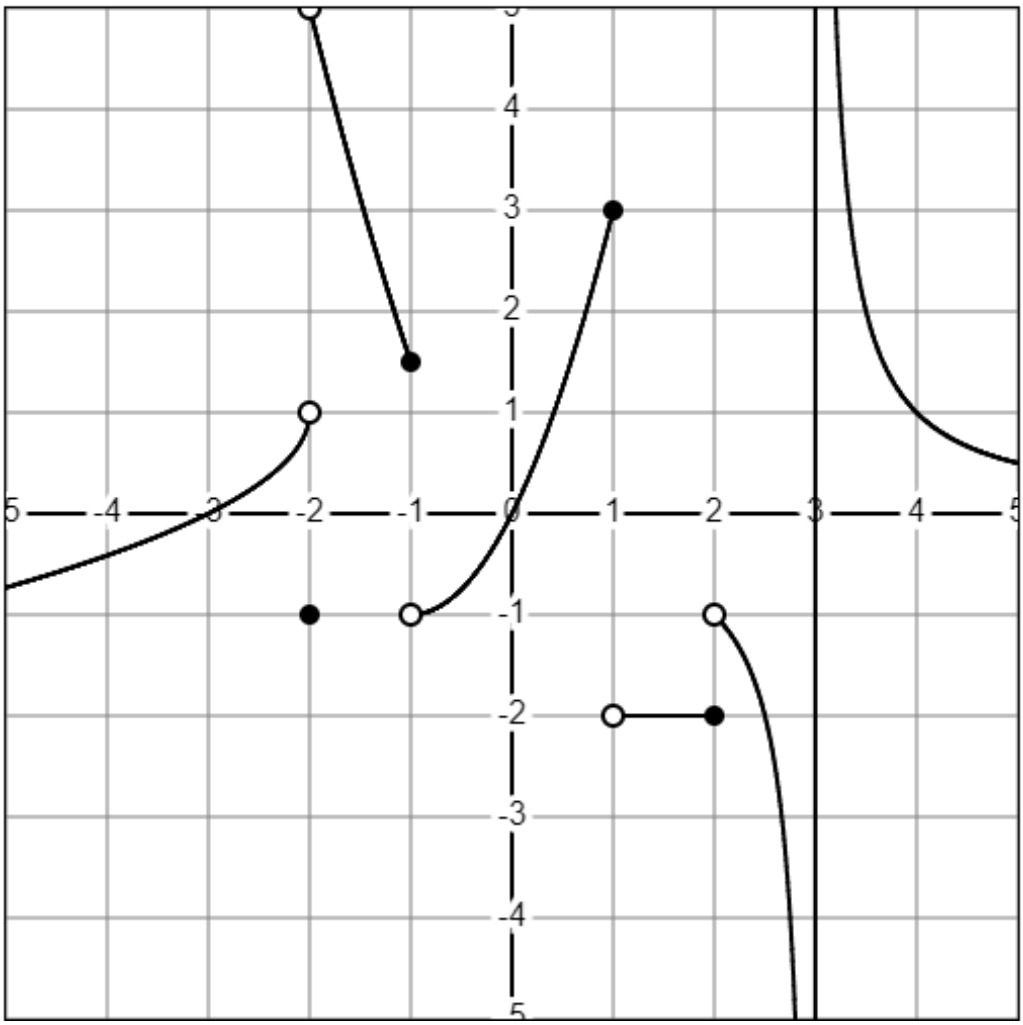
Check-up 1: Limits with a graph

$$f(x) = \begin{cases} -\sqrt{-x-2}+1 & x < -2 \\ -1 & x = -2 \\ 0.5\,(x-2)^2 - 3 & -2 < x \le -1 \\ (x+1)^2 - 1 & -1 < x \le 1 \\ -2 & 1 < x \le 2 \\ \frac{1}{(x-3)} & 2 < x \end{cases}$$



a) $\lim_{x \to -2^+} f(x)$

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

c) $f(-2)$

d) $f(-1)$

e) $\lim_{x \to 0} f(x)$

f) $\lim_{x \to 1^-} f(x)$

g) $\lim_{x \to 1^+} f(x)$

h) $f(1)$

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

j) $\lim_{x \to 3^+} f(x)$

k) $\lim_{x \to 3} f(x)$

l) $\lim_{x \to \infty} f(x)$