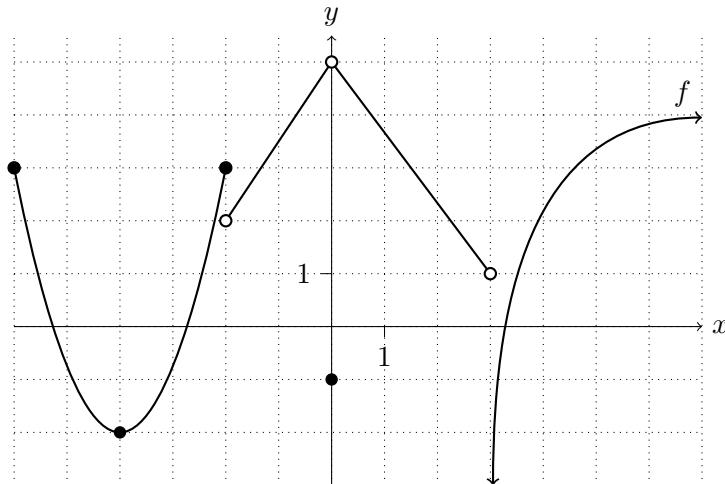


**Problem 1:** The graph of  $y = f(x)$  is shown. Use the graph to answer the questions. Use the symbols  $\infty$ ,  $-\infty$ , and DNE where appropriate.



a.  $f(0) =$

d.  $\lim_{x \rightarrow -2^+} f(x) =$

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

e.  $\lim_{h \rightarrow 0} \frac{f(-4+h) - f(-4)}{h} =$

c.  $\lim_{x \rightarrow 3^+} f(x) =$

f.  $\lim_{x \rightarrow 3^-} f(x) =$

Score: \_\_\_\_/6

**Problem 2:** Use a permissible graphing calculator (TI83, TI83+, TI84-Plus) to set up a table of intervals with their corresponding secant line slopes to estimate the instantaneous rate of change of  $y$  with respect to  $x$  for the function  $f(x) = \sqrt{3-x} + \frac{8}{x^2}$  at  $x = 2$ . Round your answers to 6 decimal places. Specify your  $Y_1$  and  $Y_2$  as part of your steps.

Interval  $Y_2 =$  \_\_\_\_\_

Score: \_\_\_\_/4