

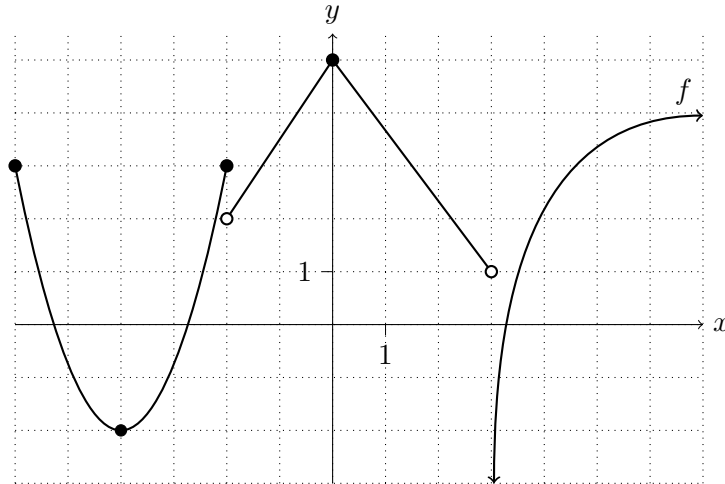
Math 108-01  
 Summer 2024  
 Dr. Lily Yen  
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# Quiz 4

Show all your work

Name: \_\_\_\_\_  
 Number: \_\_\_\_\_  
 Signature: \_\_\_\_\_  
 Score: \_\_\_\_/10

**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.  $f(-2) =$

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

c.  $\lim_{x \rightarrow -2} \frac{f(x) - f(-2)}{x + 2} =$

d.  $\lim_{h \rightarrow 0} \frac{f(1+h) - f(1)}{h} =$

e.  $\lim_{x \rightarrow -4} \frac{f(x) + 2}{x + 4} =$

Score: \_\_\_\_/5

**Problem 2:** Use the limit definition of the derivative to find the derivative of  $f(x) = \frac{1}{x+3}$  at  $x = 2$ .

Score: \_\_\_\_/5