

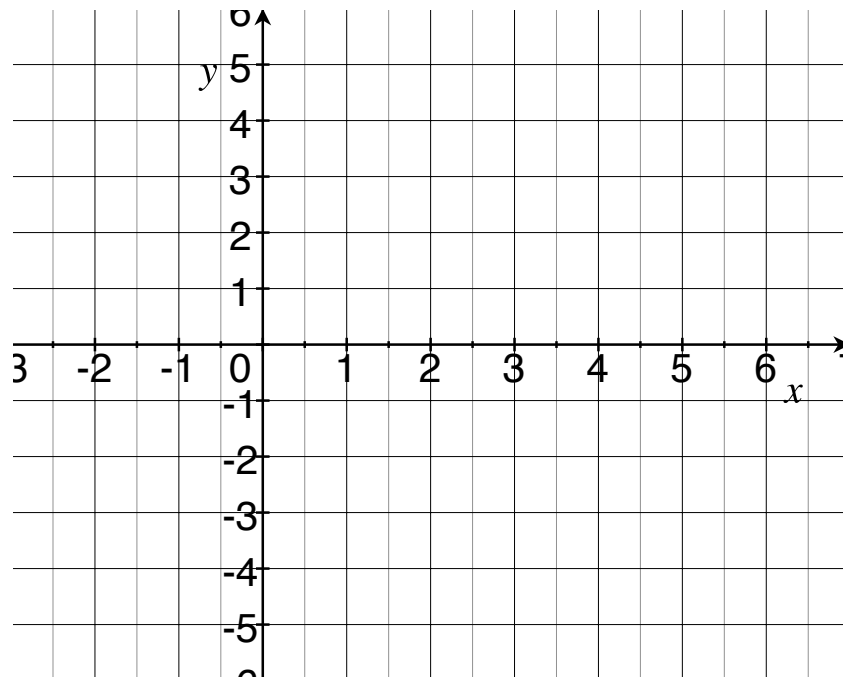
Quiz 2E

Show *all* your work. No credit is given without reasonable supporting work. There are *two* sides to this quiz.

1. [2] (Worksheets 10/3 #6 & 10/5 #4) Let f be the piecewise defined function:

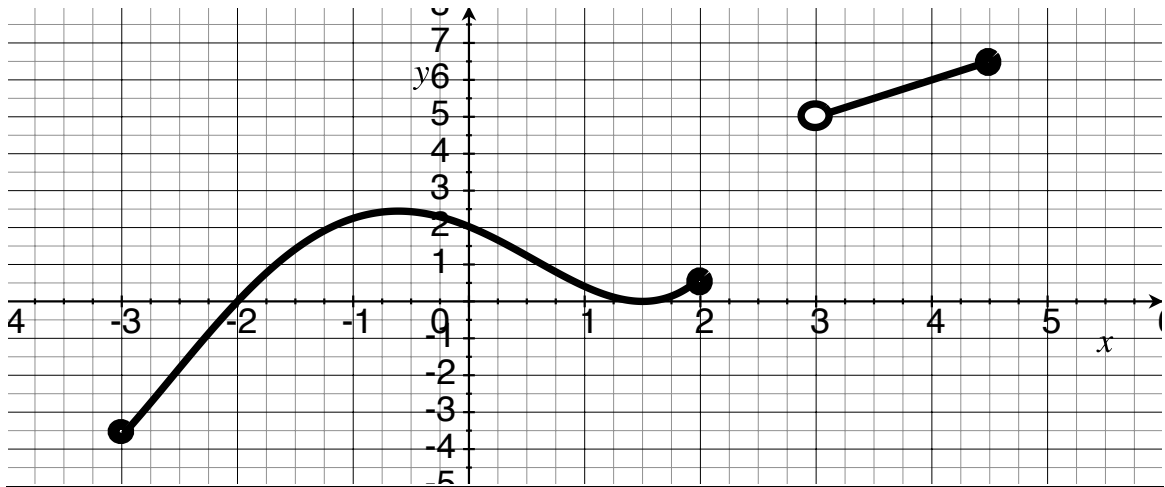
$$f(x) = \begin{cases} (x+1)^2 - 3 & \text{if } -2 \leq x \leq 1 \\ \frac{1}{2}x - 2 & \text{if } 2 \leq x \leq 5 \end{cases}$$

Graph f



2. (§2.7 #47) [2] Find f and g so that $(f \circ g)(x) = \frac{x^2}{x^2 + 4}$ (and neither f nor g is equal to the $y = x$ function).

3. Use the the graph of C shown below to answer the following questions:



(a) (WebHW3 #9) [1] Estimate $(C \circ C)(0)$.

(b) (WebHW4 #9) [1] Estimate the average rate of change between -3 and 1 .

(c) (§2.4#19f)[2] Sketch the graph of $\frac{1}{2}C(x + 1)$.

4. (§2.7 #29) Let $f(x) = 2x + 3$ and $g(x) = 4x - 1$

(a) [1] Find $f \circ g$ and its domain.

(b) [1] Find $\frac{f}{g}$ and its domain.