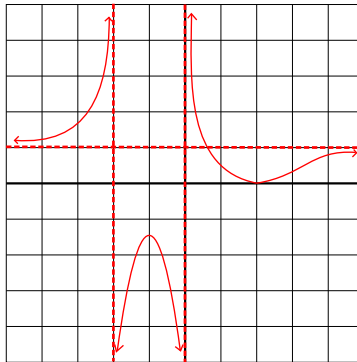


Name: \_\_\_\_\_

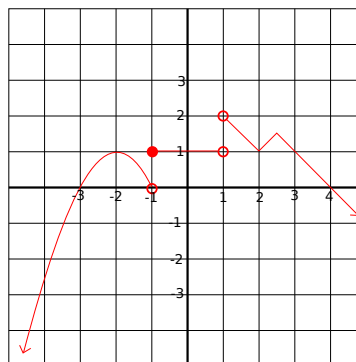
Show all work and simplify all answers before circling/boxing them. If you do the problem incorrectly, or don't show sufficient work, you will be asked to rewrite the problem for full credit.

**Due next class.** Students who turn assignments in late (or do not attempt a problem) forfeit their ability to rewrite those problems for credit.

Use the following graph for problems 1 and 2



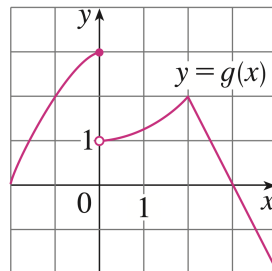
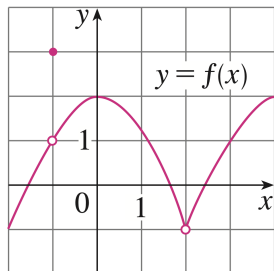
1. (a) Evaluate  $\lim_{x \rightarrow -2^+} f(x)$  (c) Evaluate  $\lim_{x \rightarrow -2} f(x)$   
 (b) Evaluate  $\lim_{x \rightarrow -2^-} f(x)$  (d) For what value of  $a$  does  $\lim_{x \rightarrow a} f(x) = 0$ ?
  2. (a) Evaluate  $\lim_{x \rightarrow -\infty} f(x)$  (c) Evaluate  $\lim_{x \rightarrow 0^+} f(x)$   
 (b) Evaluate  $\lim_{x \rightarrow \infty} f(x)$  (d) Evaluate  $\lim_{x \rightarrow 0^-} f(x)$
3. Using the graph of  $f$  below, find the following:



- (a)  $\lim_{x \rightarrow 1} f(x)$  (c)  $\lim_{x \rightarrow 3} f(x)$   
 (b)  $\lim_{x \rightarrow -1^-} f(x)$  (d)  $f(-1)$   
 (e)  $f(1)$

4. Sketch a graph for which all of the following is true:  $\lim_{x \rightarrow 0} f(x) = 1$ ,  $\lim_{x \rightarrow 3^-} f(x) = -2$ ,  $\lim_{x \rightarrow 3^+} f(x) = 2$ ,  $f(0) = -1$ , and  $f(3) = 1$

5. Use the following graphs to answer the questions below:



(a)  $\lim_{x \rightarrow 2} (f(x) + g(x))$

(c)  $\lim_{x \rightarrow 2} (x^2 f(x))$

(b)  $\lim_{x \rightarrow 0} (f(x) - g(x))$

(d)  $f(-1) + \lim_{x \rightarrow -1} g(x)$