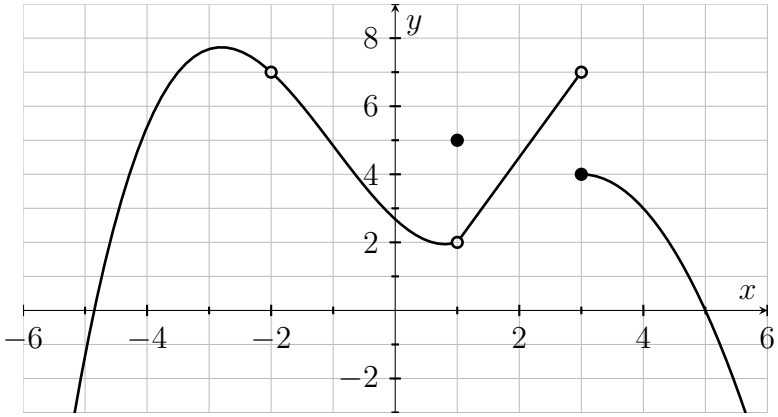
Name _____

Homework 5
Sections 2.4 & 2.5

1. (1ea) Use the function, $f(x)$, graphed below to determine each quantity (if it exists). If a quantity is undefined or does not exist, simply write "undefined" or "does not exist."



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

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

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

(d) $f(-2) =$

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

(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) $f(3) =$

(m) $\lim_{x\to 4^-} f(x) =$

(n) $\lim_{x\to 4^+} f(x) =$

(o) $\lim_{x\to 4} f(x) =$

(p) $f(4) =$

2. (1ea) Use the function $f(x) = \begin{cases} 4x+1 & x < -1 \\ x^2+2 & -1 \leq x < 0 \\ \frac{5x+2}{1-x} & 0 < x \end{cases}$ to determine the following, if they exist:

(a) $f(0)$

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

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

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