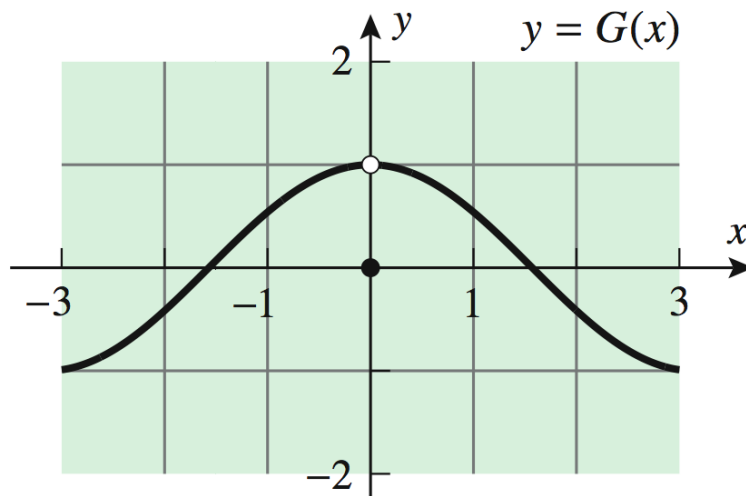# Limits Worksheet

1. For the function G graphed in the accompanying figure, find

(a) $\lim\limits_{x \to 0^-} G(x)$
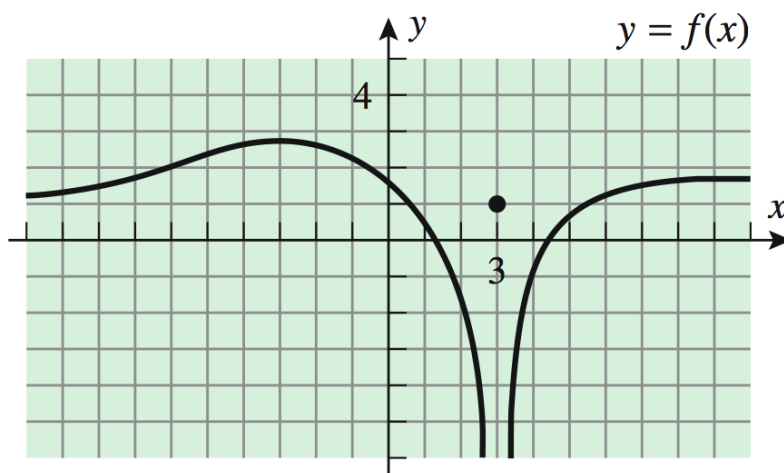
(b) $\lim\limits_{x \to 0^+} G(x)$

(c) $\lim\limits_{x \to 0} G(x)$

(b) $G(0)$

2. For the function f graphed in the accompanying figure, find

(a) $\lim\limits_{x \to 3^-} f(x)$

(b) $\lim\limits_{x \to 3^+} f(x)$

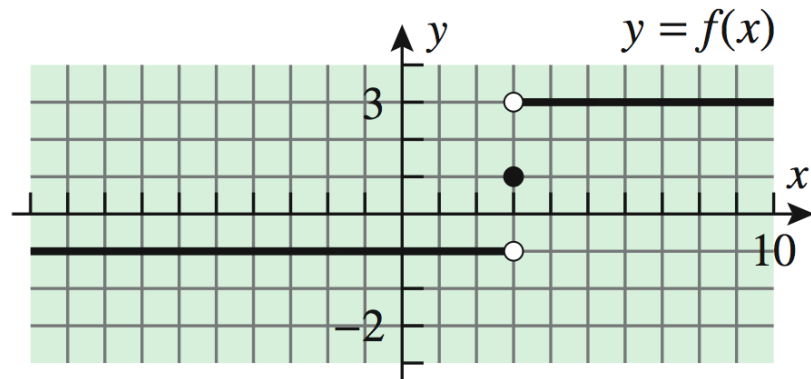(c) $\lim\limits_{x \to 3} f(x)$

(b) $f(3)$

3. For the function f graphed in the accompanying figure, find

(a) $\lim\limits_{x\to 3^-} f(x)$ (b) $\lim\limits_{x\to 3^+} f(x)$
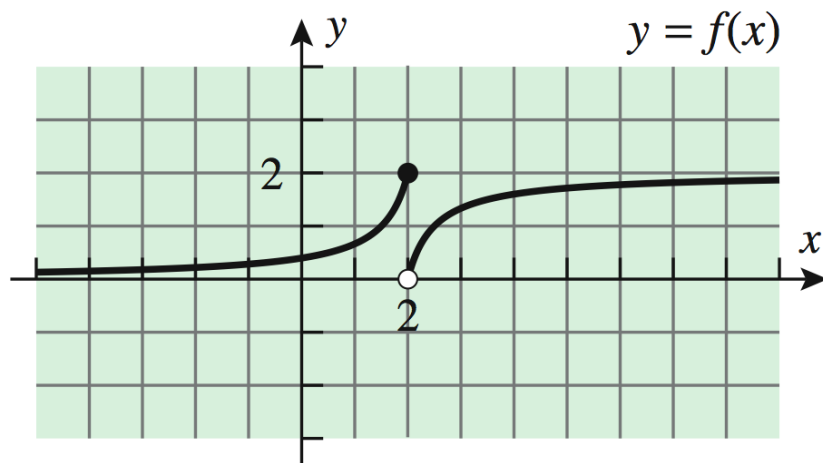
(c) $\lim\limits_{x\to 3} f(x)$ (b) $f(3)$

4. For the function f graphed in the accompanying figure, find

(a) $\lim\limits_{x\to -1^-} f(x)$ (b) $\lim\limits_{x\to -1^+} f(x)$ (c) $\lim\limits_{x\to -1} f(x)$

(c) $\lim\limits_{x\to -1^-} f(x)$ (d) $\lim\limits_{x\to -1^+} f(x)$ (e) $\lim\limits_{x\to -1} f(x)$

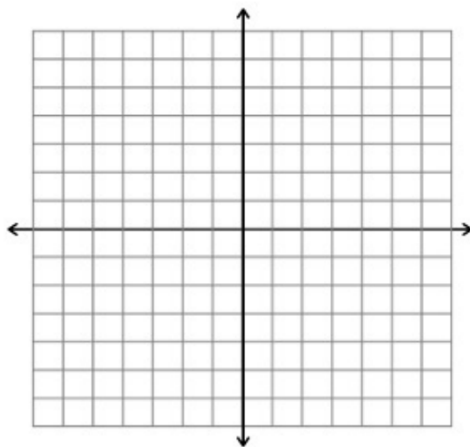**5.** For the function g graphed in the accompanying figure, find

     (a) $\lim\limits_{x\to 1^-} g(x)$ (b) $\lim\limits_{x\to 1^+} g(x)$

     (c) $\lim\limits_{x\to 1} g(x)$ (b) $g(1)$
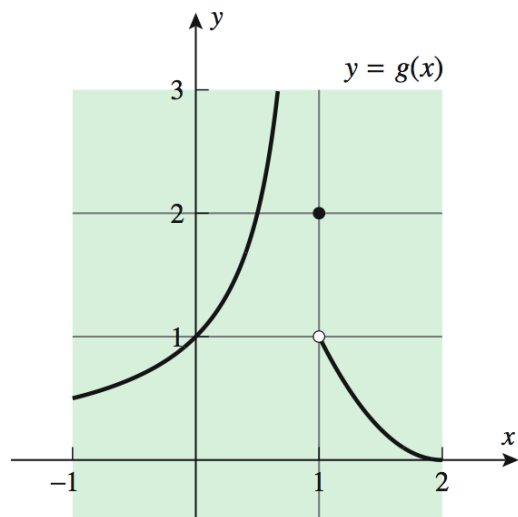
6. On the axes provided below, sketch a possible graph for a function f with the specified properties.

    i. the domain is $[-1,1]$

    ii. $f(-1) = f(0) = f(1) = 0$

    iii. $\lim\limits_{x\to -1^+} f(x) = \lim\limits_{x\to 0} f(x) = \lim\limits_{x\to 1^-} f(x) = 1$
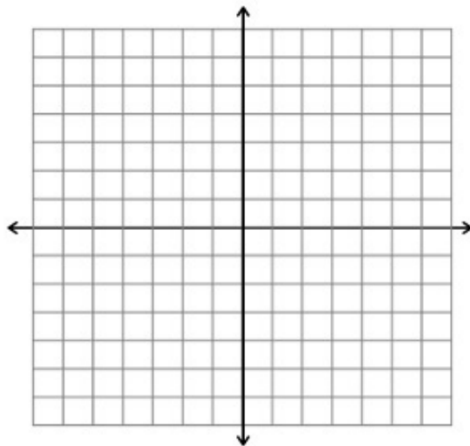

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7. On the axes provided below, sketch a possible graph for a function f with the specified properties.

    i. the domain is $[-\infty, 1]$

    ii. $f(-2) = f(1) = 1$

    iii. $\lim\limits_{x \to -2} f(x) = +\infty$

8. On the axes provided below, sketch a possible graph for a function f with the specified properties.

    i. the domain is $[-2, 1]$

    ii. $f(-2) = f(0) = f(1) = 0$

    iii. $\lim\limits_{x \to -2+} f(x) = 2, \ \lim\limits_{x \to 0} f(x) = 0, \ \lim\limits_{x \to 1-} f(x) = 1$