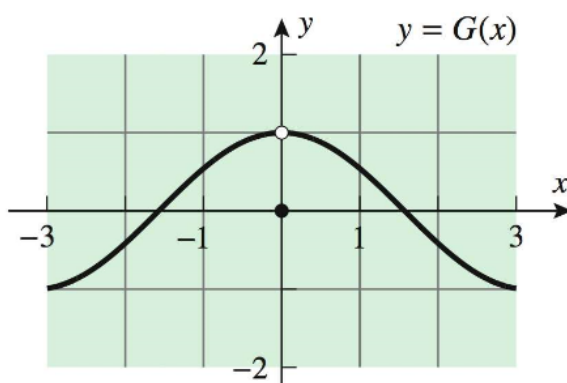# Limits Worksheet

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

(a) $\lim\limits_{x \to 0^-} G(x) = 1$ (b) $\lim\limits_{x \to 0^+} G(x) = 1$
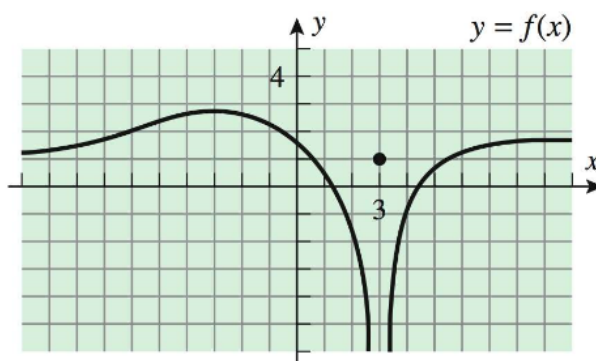
(c) $\lim\limits_{x \to 0} G(x) = 1$ (b) $G(0) = 0$

$y = G(x)$

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

(a) $\lim\limits_{x \to 3^-} f(x) = -\infty$ (b) $\lim\limits_{x \to 3^+} f(x) = -\infty$
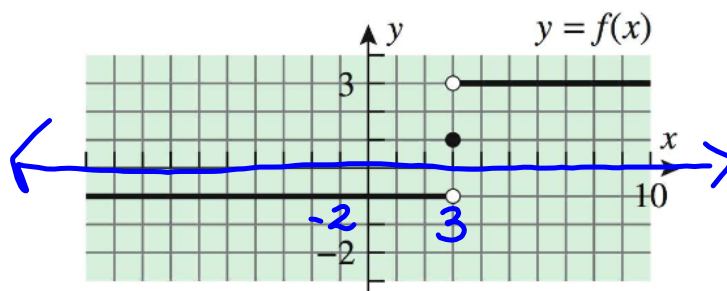
(c) $\lim\limits_{x \to 3} f(x) = -\infty$ (b) $f(3) = 1$

$y = f(x)$

1

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

(a) $\lim\limits_{x \to 3^-} f(x)$ = -1 (b) $\lim\limits_{x \to 3^+} f(x)$ = 3
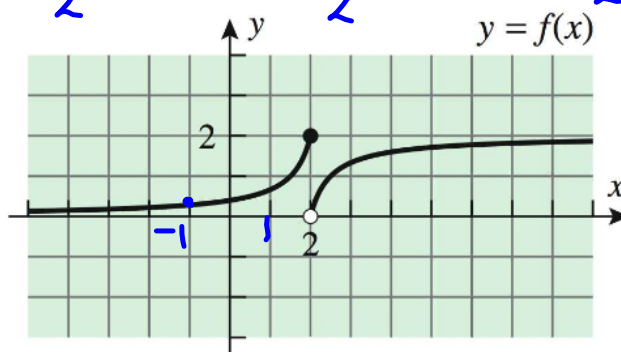
(c) $\lim\limits_{x \to 3} f(x)$ DNE (b) $f(3)$ = 1

$y = f(x)$

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

(a) $\lim\limits_{x \to -1^-} f(x)$ = .25 (b) $\lim\limits_{x \to -1^+} f(x)$ .25 (c) $\lim\limits_{x \to -1} f(x)$ .25

(c) $\lim\limits_{x \to 1^-} f(x)$ = 2 2^- (d) $\lim\limits_{x \to 1^+} f(x)$ = 0 2^+ (e) $\lim\limits_{x \to 1} f(x)$ DNE 2
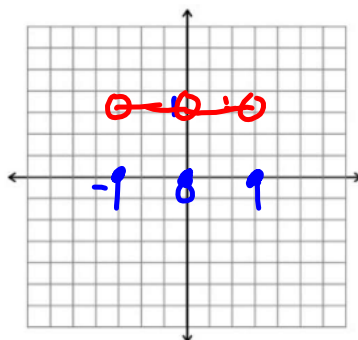
$y = f(x)$

2

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

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

(c) $\lim\limits_{x \to 1} g(x)$ DNE   (b) $g(1)$ $= 2$
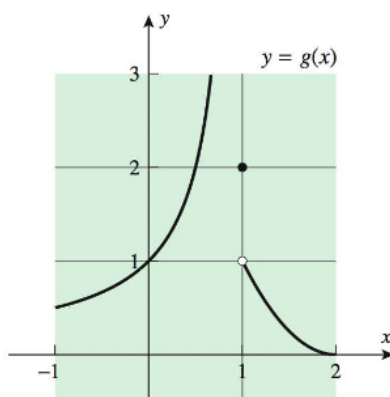
6. On the axes provided below, sketch a possible graph for a function f with the specified properties.

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

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

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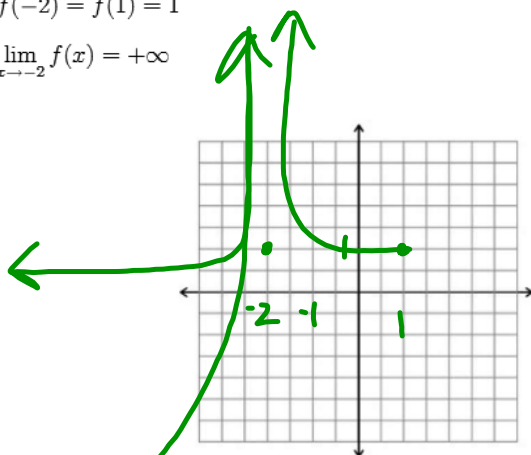

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7. On the axes provided below, sketch a possible graph for a function f with the specified properties.

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

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