#1-3 Complete the table of values (to five decimal places) and use the table to estimate the value of the limit.

1. $\lim\limits_{x \to 2} \dfrac{x-2}{x^2+x-6}$

x	1.9	1.99	1.999	2.001	2.01	2.1
$f(x)$						

2. $\lim\limits_{x \to 0} \dfrac{e^x-1}{x}$

x	−0.1	−0.01	−0.001	0.001	0.01	0.1
$f(x)$						

3. $\lim\limits_{x \to 0} \dfrac{\sin x}{x}$

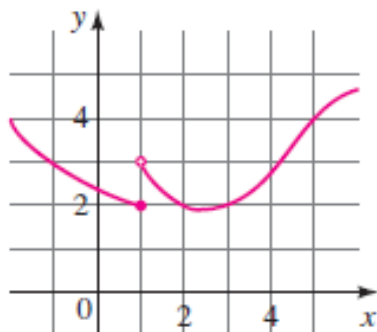| x	±1	±0.5	±0.1	±0.05	±0.01
$f(x)$					

#4-5 Use a table of values to estimate the value of the limit.

4. $\lim\limits_{x \to -4} \dfrac{x+4}{x^2+7x+12}$

5. $\lim\limits_{x \to 0} \dfrac{\sqrt{x+9}-3}{x}$

6. For the function f whose graph is given, state the value of the given quantity, if it exists.

$a) \lim\limits_{x \to 1^-} f(x) \qquad b) \lim\limits_{x \to 1^+} f(x) \qquad c) \lim\limits_{x \to 1} f(x) \qquad d) \lim\limits_{x \to 5} f(x) \qquad e) f(5)$

7. For the function g whose graph is given, state the value of the given quantity, if it exists.

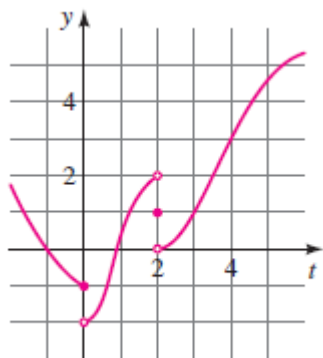$a)\lim_{x\to0^-} g(t)$ $b)\lim_{x\to0^+} g(t)$ $c)\lim_{x\to0} g(t)$

$d)\lim_{x\to2^-} g(t)$ $e)\lim_{x\to2^+} g(t)$ $f)\lim_{x\to2} g(t)$

$g)g(2)$ $h)\lim_{x\to4} g(t)$

8. State the value of the limit, if it exists, from the given graph of f.
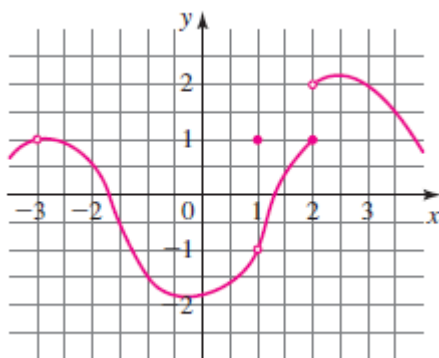
$a)\lim_{x\to3} f(x)$ $b)\lim_{x\to1} f(x)$ $c)\lim_{x\to-3} f(x)$

$d)\lim_{x\to2^-} f(x)$ $e)\lim_{x\to2^+} f(x)$ $f)\lim_{x\to2} f(x)$

#9-10 Graph the piecewise-defined function and use your graph to find the values of the limits, if they exist.

9.

$$f(x) = \begin{cases} 2 & \text{if } x < 0 \\ x+1 & \text{if } x \ge 0 \end{cases}$$

$a)\lim_{x\to0^-} f(x)$ $b)\lim_{x\to0^+} f(x)$ $c)\lim_{x\to0} f(x)$

10.

$$f(x) = \begin{cases} 2x + 10 & \text{if } x \le -2 \\ -x + 4 & \text{if } x > -2 \end{cases}$$

(a) $\lim\limits_{x \to -2^-} f(x)$ (b) $\lim\limits_{x \to -2^+} f(x)$ (c) $\lim\limits_{x \to -2} f(x)$