

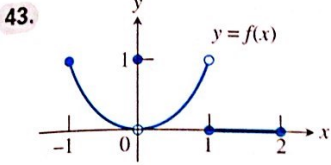
39. $\lim_{x \rightarrow 0.01} \int x \, 0$

40. $\lim_{x \rightarrow 2^-} \int x \, 1$

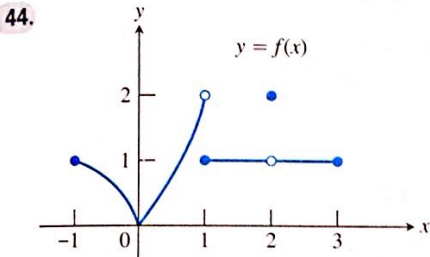
41. $\lim_{x \rightarrow 0^+} \frac{x}{|x|} \, 1$

42. $\lim_{x \rightarrow 0^-} \frac{x}{|x|} \, -1$

In Exercises 43 and 44, which of the statements are true about the function $y = f(x)$ graphed there, and which are false?

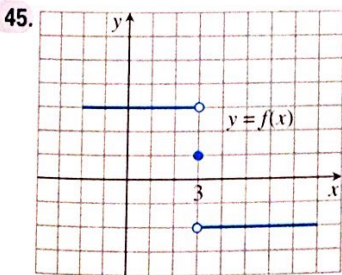


- (a) $\lim_{x \rightarrow -1^+} f(x) = 1$ True
- (b) $\lim_{x \rightarrow 0} f(x) = 0$ True
- (c) $\lim_{x \rightarrow 0^-} f(x) = 1$ False
- (d) $\lim_{x \rightarrow 0} f(x) = \lim_{x \rightarrow 0^+} f(x)$ True
- (e) $\lim_{x \rightarrow 0} f(x)$ exists True
- (f) $\lim_{x \rightarrow 0} f(x) = 0$ True
- (g) $\lim_{x \rightarrow 0} f(x) = 1$ False
- (h) $\lim_{x \rightarrow 1} f(x) = 1$ False
- (i) $\lim_{x \rightarrow 1} f(x) = 0$ False
- (j) $\lim_{x \rightarrow 2} f(x) = 2$ False

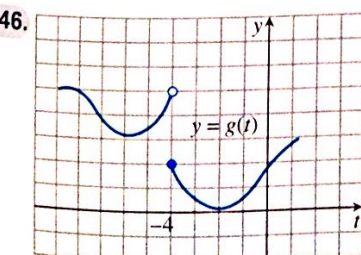


- (a) $\lim_{x \rightarrow -1^+} f(x) = 1$ True
- (b) $\lim_{x \rightarrow 2} f(x)$ does not exist. False
- (c) $\lim_{x \rightarrow 2} f(x) = 2$ False
- (d) $\lim_{x \rightarrow 1} f(x) = 2$ True
- (e) $\lim_{x \rightarrow 1^+} f(x) = 1$ True
- (f) $\lim_{x \rightarrow 1} f(x)$ does not exist. True
- (g) $\lim_{x \rightarrow 0^+} f(x) = \lim_{x \rightarrow 0^-} f(x)$ True
- (h) $\lim_{x \rightarrow c} f(x)$ exists at every c in $(-1, 1)$. True
- (i) $\lim_{x \rightarrow c} f(x)$ exists at every c in $(1, 3)$. True

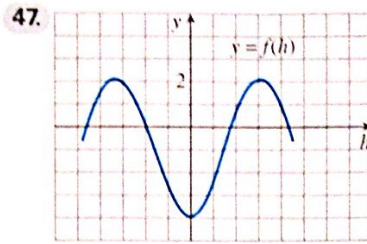
In Exercises 45–50, use the graph to estimate the limits and value of the function, or explain why the limits do not exist.



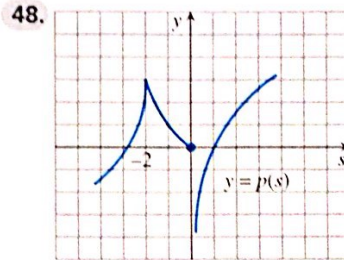
- (a) $\lim_{x \rightarrow 3^-} f(x) \, 3$
- (b) $\lim_{x \rightarrow 3^+} f(x) \, -2$
- (c) $\lim_{x \rightarrow 3} f(x)$ No limit
- (d) $f(3) \, 1$



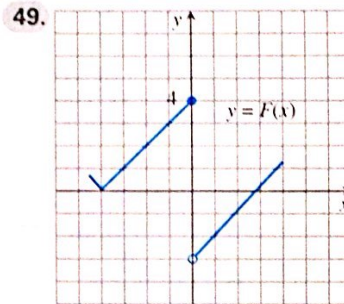
- (a) $\lim_{t \rightarrow -4^-} g(t) \, 5$
- (b) $\lim_{t \rightarrow -4^+} g(t) \, 2$
- (c) $\lim_{t \rightarrow -4} g(t)$ No limit
- (d) $g(-4) \, 2$



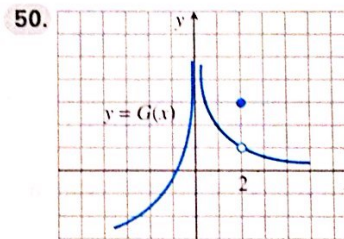
- (a) $\lim_{h \rightarrow 0^-} f(h) \, -4$
- (b) $\lim_{h \rightarrow 0^+} f(h) \, -4$
- (c) $\lim_{h \rightarrow 0} f(h) \, -4$
- (d) $f(0) \, -4$



- (a) $\lim_{s \rightarrow -2^-} p(s) \, 3$
- (b) $\lim_{s \rightarrow -2^+} p(s) \, 3$
- (c) $\lim_{s \rightarrow -2} p(s) \, 3$
- (d) $p(-2) \, 3$



- (a) $\lim_{x \rightarrow 0^-} F(x) \, 4$
- (b) $\lim_{x \rightarrow 0^+} F(x) \, -3$
- (c) $\lim_{x \rightarrow 0} F(x)$ No limit
- (d) $F(0) \, 4$



- (a) $\lim_{x \rightarrow 2^-} G(x) \, 1$
- (b) $\lim_{x \rightarrow 2^+} G(x) \, 1$
- (c) $\lim_{x \rightarrow 2} G(x) \, 1$
- (d) $G(2) \, 3$

In Exercises 51–54, match the function with the table.

51. $y_1 = \frac{x^2 + x - 2}{x - 1}$ (c)

52. $y_1 = \frac{x^2 - x - 2}{x - 1}$ (b)

53. $y_1 = \frac{x^2 - 2x + 1}{x - 1}$ (d)

54. $y_1 = \frac{x^2 + x - 2}{x + 1}$ (a)

X	Y1
.7	-.4765
.8	-.3111
.9	-.1526
1	0
1.1	.14762
1.2	.29091
1.3	.43043

X = .7

(a)

X	Y1
.7	7.3667
.8	10.8
.9	20.9
1	ERROR
1.1	-18.9
1.2	-8.8
1.3	-5.367

X = .7

(b)

X	Y1
.7	2.7
.8	2.8
.9	2.9
1	ERROR
1.1	3.1
1.2	3.2
1.3	3.3

X = .7

(c)

X	Y1
.7	-.3
.8	-.2
.9	-.1
1	ERROR
1.1	.1
1.2	.2
1.3	.3

X = .7

(d)