One-Sided Limits & Continuity · 1

$f(x) = -x - 1$ if $x < 1$; $f(x) = -2x + 3$ if $x \geq 1$. Find the limit of $f(x)$ as x approaches 1 from the left.

One-Sided Limits & Continuity · 2

$f(x) = x - 4$ if $x < -3$; $f(x) = x + 2$ if $x \geq -3$. Find the limit of $f(x)$ as x approaches -3 from the right.

One-Sided Limits & Continuity · 3

$f(x) = x + 1$ if $x \leq -1$; $f(x) = 2x + 2$ if $x > -1$. Find $\lim(x \to -1)$ of $f(x)$. If the limit does not exist, write DNE.

One-Sided Limits & Continuity · 4

$f(x) = -x + 2$ if $x \leq 1$; $f(x) = 2x - 1$ if $x > 1$. Is f continuous at $x = 1$? Write yes or no.

One-Sided Limits & Continuity · 5

$f(x) = x - 3$ if $x \leq 4$; $f(x) = 2x + 4$ if $x > 4$. Find the limit of $f(x)$ as x approaches 4 from the left.

One-Sided Limits & Continuity · 6

$f(x) = x + 3$ if $x < -4$; $f(x) = 2x - 1$ if $x \geq -4$. Find the limit of $f(x)$ as x approaches -4 from the right.

One-Sided Limits & Continuity · 7

$f(x) = x - 2$ if $x \leq -1$; $f(x) = 2x - 1$ if $x > -1$. Find $\lim(x \to -1)$ of $f(x)$. If the limit does not exist, write DNE.

One-Sided Limits & Continuity · 8

$f(x) = x - 1$ if $x < 0$; $f(x) = x - 3$ if $x \geq 0$. Is f continuous at $x = 0$? Write yes or no.

One-Sided Limits & Continuity · 2

ANSWER

-1

One-Sided Limits & Continuity · 1

ANSWER

-2

One-Sided Limits & Continuity · 4

ANSWER

yes

One-Sided Limits & Continuity · 3

ANSWER

0

One-Sided Limits & Continuity · 6

ANSWER

-9

One-Sided Limits & Continuity · 5

ANSWER

1

One-Sided Limits & Continuity · 8

ANSWER

no

One-Sided Limits & Continuity · 7

ANSWER

-3

One-Sided Limits & Continuity · 9

$f(x) = -3x + 5$ if $x \leq -3$; $f(x) = -3x - 1$ if $x > -3$. Find the limit of $f(x)$ as x approaches -3 from the left.

One-Sided Limits & Continuity · 10

$f(x) = x + 5$ if $x \leq 1$; $f(x) = -3x - 2$ if $x > 1$. Find the limit of $f(x)$ as x approaches 1 from the right.

One-Sided Limits & Continuity · 11

$f(x) = 2x + 5$ if $x < -2$; $f(x) = x + 4$ if $x \geq -2$. Find $\lim(x \to -2)$ of $f(x)$. If the limit does not exist, write DNE.

One-Sided Limits & Continuity · 12

$f(x) = 3x - 2$ if $x \leq 1$; $f(x) = -3x + 4$ if $x > 1$. Is f continuous at $x = 1$? Write yes or no.

One-Sided Limits & Continuity · 13

$f(x) = x + 4$ if $x \leq 1$; $f(x) = x$ if $x > 1$. Find the limit of $f(x)$ as x approaches 1 from the left.

One-Sided Limits & Continuity · 14

$f(x) = 2x - 2$ if $x < -4$; $f(x) = 3x - 2$ if $x \geq -4$. Find the limit of $f(x)$ as x approaches -4 from the right.

One-Sided Limits & Continuity · 15

$f(x) = -2x + 2$ if $x \leq -4$; $f(x) = 3x + 3$ if $x > -4$. Find $\lim(x \to -4)$ of $f(x)$. If the limit does not exist, write DNE.

One-Sided Limits & Continuity · 16

$f(x) = 2x + 4$ if $x < -3$; $f(x) = x + 1$ if $x \geq -3$. Is f continuous at $x = -3$? Write yes or no.

One-Sided Limits & Continuity · 10

ANSWER

-5

One-Sided Limits & Continuity · 9

ANSWER

14

One-Sided Limits & Continuity · 12

ANSWER

yes

One-Sided Limits & Continuity · 11

ANSWER

DNE

One-Sided Limits & Continuity · 14

ANSWER

-14

One-Sided Limits & Continuity · 13

ANSWER

5

One-Sided Limits & Continuity · 16

ANSWER

yes

One-Sided Limits & Continuity · 15

ANSWER

DNE

One-Sided Limits & Continuity · 17

$f(x) = 2x - 3$ if $x < -1$; $f(x) = x^2 - 6$ if $x \geq -1$. Find $\lim_{x \to -1}$ of $f(x)$. If the limit does not exist, write DNE.

One-Sided Limits & Continuity · 18

$f(x) = -3x + 3$ if $x \leq 3$; $f(x) = -3x$ if $x > 3$. Is f continuous at $x = 3$? Write yes or no.

One-Sided Limits & Continuity · 19

$f(x) = 5x + 18$ if $x < -2$; $f(x) = x^2 + k$ if $x \geq -2$. Find the value of k that makes f continuous at $x = -2$.

One-Sided Limits & Continuity · 20

$f(x) = -2x - 6$ if $x \leq 3$; $f(x) = 2x - 2$ if $x > 3$. Find the limit of $f(x)$ as x approaches 3 from the right.

One-Sided Limits & Continuity · 21

$f(x) = x^2 - 2$ if $x < 4$; $f(x) = x^2 - 4$ if $x \geq 4$. Find the limit of $f(x)$ as x approaches 4 from the left.

One-Sided Limits & Continuity · 22

$f(x) = 3x - 3$ if $x \leq 1$; $f(x) = 2x - 2$ if $x > 1$. Find $\lim_{x \to 1}$ of $f(x)$. If the limit does not exist, write DNE.

One-Sided Limits & Continuity · 23

$f(x) = x^2 - 3$ if $x < -3$; $f(x) = 4x$ if $x \geq -3$. Find $\lim_{x \to -3}$ of $f(x)$. If the limit does not exist, write DNE.

One-Sided Limits & Continuity · 24

$f(x) = -3x - 1$ if $x < 5$; $f(x) = x^2 - 41$ if $x \geq 5$. Is f continuous at $x = 5$? Write yes or no.

One-Sided Limits & Continuity · 18

ANSWER

no

One-Sided Limits & Continuity · 17

ANSWER

-5

One-Sided Limits & Continuity · 20

ANSWER

4

One-Sided Limits & Continuity · 19

ANSWER

k = 4

One-Sided Limits & Continuity · 22

ANSWER

0

One-Sided Limits & Continuity · 21

ANSWER

14

One-Sided Limits & Continuity · 24

ANSWER

yes

One-Sided Limits & Continuity · 23

ANSWER

DNE