One-Sided Limits & Continuity · 1

$f(x) = kx - 14$ if $x \le -1$; $f(x) = -2x + k$ if $x > -1$. Find the value of k that makes f continuous at $x = -1$.

One-Sided Limits & Continuity · 2

$f(x) = \frac{1}{x + 4}$. Classify the discontinuity at $x = -4$: removable, jump or infinite.

One-Sided Limits & Continuity · 3

$f(x) = \frac{x^2 + 2x - 24}{x + 6}$ is not defined at $x = -6$. What value must f(-6) be given to make f continuous there?

One-Sided Limits & Continuity · 4

$f(x) = -3x - 5$ if $x \le -1$; $f(x) = x^2 + k$ if $x > -1$. Find the value of k that makes f continuous at $x = -1$.

One-Sided Limits & Continuity · 5

$f(x) = 2x + 5$ if $x \neq 0$; $f(x) = 7$ if $x = 0$. Find $\lim(x \to 0)$ of f(x). If the limit does not exist, write DNE.

One-Sided Limits & Continuity · 6

$f(x) = -x + 8$ if $x \neq 0$; $f(x) = 11$ if $x = 0$. Classify the discontinuity at $x = 0$: removable, jump or infinite.

One-Sided Limits & Continuity · 7

$f(x) = -2x - 5$ if $x \le 2$; $f(x) = 2x + 3$ if $x > 2$. Find $\lim(x \to 2)$ of f(x). If the limit does not exist, write DNE.

One-Sided Limits & Continuity · 8

$f(x) = kx + 16$ if $x \le -1$; $f(x) = -2x + k$ if $x > -1$. Find the value of k that makes f continuous at $x = -1$.

One-Sided Limits & Continuity · 2

ANSWER

infinite

One-Sided Limits & Continuity · 1

ANSWER

k = -8

One-Sided Limits & Continuity · 4

ANSWER

k = -3

One-Sided Limits & Continuity · 3

ANSWER

-10

One-Sided Limits & Continuity · 6

ANSWER

removable

One-Sided Limits & Continuity · 5

ANSWER

5

One-Sided Limits & Continuity · 8

ANSWER

k = 7

One-Sided Limits & Continuity · 7

ANSWER

DNE

One-Sided Limits & Continuity · 9

$f(x) = kx - 13$ if $x < -1$; $f(x) = -x + k$ if $x \geq -1$. Find the value of k that makes f continuous at $x = -1$.

One-Sided Limits & Continuity · 10

$f(x) = \frac{4}{x - 2}$. Classify the discontinuity at $x = 2$: removable, jump or infinite.

One-Sided Limits & Continuity · 11

$f(x) = \frac{3x^2 - 15x + 18}{x - 2}$ is not defined at $x = 2$. What value must f(2) be given to make f continuous there?

One-Sided Limits & Continuity · 12

$f(x) = 5x + 31$ if $x < -3$; $f(x) = x^2 + k$ if $x \geq -3$. Find the value of k that makes f continuous at $x = -3$.

One-Sided Limits & Continuity · 13

$f(x) = 4x - 8$ if $x \neq 4$; $f(x) = 12$ if $x = 4$. Find $\lim(x \to 4)$ of f(x). If the limit does not exist, write DNE.

One-Sided Limits & Continuity · 14

$f(x) = 2x^2 - 6$ if $x < 3$; $f(x) = x^2 + 6$ if $x \geq 3$. Classify the discontinuity at $x = 3$: removable, jump or infinite.

One-Sided Limits & Continuity · 15

$f(x) = 5x - 1$ if $x < -4$; $f(x) = x^2 - 37$ if $x \geq -4$. Find $\lim(x \to -4)$ of f(x). If the limit does not exist, write DNE.

One-Sided Limits & Continuity · 16

$f(x) = kx - 29$ if $x \leq 5$; $f(x) = -x + k$ if $x > 5$. Find the value of k that makes f continuous at $x = 5$.

One-Sided Limits & Continuity · 10

ANSWER

infinite

One-Sided Limits & Continuity · 9

ANSWER

k = -7

One-Sided Limits & Continuity · 12

ANSWER

k = 7

One-Sided Limits & Continuity · 11

ANSWER

-3

One-Sided Limits & Continuity · 14

ANSWER

jump

One-Sided Limits & Continuity · 13

ANSWER

8

One-Sided Limits & Continuity · 16

ANSWER

k = 6

One-Sided Limits & Continuity · 15

ANSWER

-21

One-Sided Limits & Continuity · 17

$f(x) = kx - 20$ if $x \leq -1$; $f(x) = 4x + k$ if $x > -1$. Find the value of k that makes f continuous at $x = -1$.

One-Sided Limits & Continuity · 18

$f(x) = -2x - 1$ if $x < 0$; $f(x) = 2x - 6$ if $x \geq 0$. Classify the discontinuity at $x = 0$: removable, jump or infinite.

One-Sided Limits & Continuity · 19

$f(x) = \dfrac{3x^2 + 3x - 18}{x + 3}$ is not defined at $x = -3$. What value must $f(-3)$ be given to make f continuous there?

One-Sided Limits & Continuity · 20

$f(x) = -x - 3$ if $x \leq 1$; $f(x) = x^2 + k$ if $x > 1$. Find the value of k that makes f continuous at $x = 1$.

One-Sided Limits & Continuity · 21

$f(x) = 4x - 6$ if $x \neq -2$; $f(x) = -17$ if $x = -2$. Find $\lim(x \to -2)$ of $f(x)$. If the limit does not exist, write DNE.

One-Sided Limits & Continuity · 22

$f(x) = 5x + 5$ if $x \neq 4$; $f(x) = 23$ if $x = 4$. Classify the discontinuity at $x = 4$: removable, jump or infinite.

One-Sided Limits & Continuity · 23

$f(x) = -5x + 7$ if $x < 2$; $f(x) = -2x + 1$ if $x \geq 2$. Find $\lim(x \to 2)$ of $f(x)$. If the limit does not exist, write DNE.

One-Sided Limits & Continuity · 24

$f(x) = kx + 26$ if $x < -3$; $f(x) = -2x + k$ if $x \geq -3$. Find the value of k that makes f continuous at $x = -3$.

One-Sided Limits & Continuity · 18

ANSWER

jump

One-Sided Limits & Continuity · 17

ANSWER

k = -8

One-Sided Limits & Continuity · 20

ANSWER

k = -5

One-Sided Limits & Continuity · 19

ANSWER

-15

One-Sided Limits & Continuity · 22

ANSWER

removable

One-Sided Limits & Continuity · 21

ANSWER

-14

One-Sided Limits & Continuity · 24

ANSWER

k = 5

One-Sided Limits & Continuity · 23

ANSWER

-3