Task card 1 — One-Sided Limits & Continuity

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

Task card 2 — One-Sided Limits & Continuity

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

Task card 3 — One-Sided Limits & Continuity

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

Task card 4 — One-Sided Limits & Continuity

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

Task card 5 — One-Sided Limits & Continuity

$f(x) = 2x + 5$ 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.

Task card 6 — One-Sided Limits & Continuity

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

Task card 7 One-Sided Limits & Continuity

$f(x) = -2x - 5$ if $x \leq 2$; $f(x) = 2x + 3$ if $x > 2$. Find $\lim_{x \to 2} f(x)$. If the limit does not exist, write DNE.

Task card 8 One-Sided Limits & Continuity

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

Task card 9 One-Sided Limits & Continuity

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

Task card 10 One-Sided Limits & Continuity

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

Task card 11 One-Sided Limits & Continuity

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

Task card 12 One-Sided Limits & Continuity

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

Task card 13 One-Sided Limits & Continuity

$f(x) = 4x - 8$ 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.

Task card 14 One-Sided Limits & Continuity

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

Task card 15 One-Sided Limits & Continuity

$f(x) = 5x - 1$ 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.

Task card 16 One-Sided Limits & Continuity

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

Task card 17 One-Sided Limits & Continuity

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

Task card 18 One-Sided Limits & Continuity

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

Task card 19 One-Sided Limits & Continuity

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

Task card 20 One-Sided Limits & Continuity

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

Task card 21 One-Sided Limits & Continuity

$f(x) = 4x - 6$ 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.

Task card 22 One-Sided Limits & Continuity

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

Task card 23 One-Sided Limits & Continuity

$f(x) = -5x + 7$ 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.

Task card 24 One-Sided Limits & Continuity

$f(x) = kx + 26$ 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 Task Cards

Recording sheet · Grade 12 · Answer each question. If a limit does not exist write DNE. For yes-or-no questions write yes or no.

Name: _____ Date: _____

Scan to check your answers

1	2	3	4
5	6	7	8
9	10	11	12
13	14	15	16
17	18	19	20
21	22	23	24

One-Sided Limits & Continuity Task Cards: Answer Key

Grade 12 · Hard

The answers online

1. k = -8	**2.** infinite	**3.** -10
4. k = -3	**5.** 5	**6.** removable
7. DNE	**8.** k = 7	**9.** k = -7
10. infinite	**11.** -3	**12.** k = 7
13. 8	**14.** jump	**15.** -21
16. k = 6	**17.** k = -8	**18.** jump
19. -15	**20.** k = -5	**21.** -14
22. removable	**23.** -3	**24.** k = 5