

Sudoku Puzzle with Limits

A Puzzle by David Pleacher

Solve the 28 limit problems below and place the answer in the corresponding cell (labeled A, B, C, ... Y, Z, a, b). Your answers should be integers from 1 to 9 inclusive. Then solve the resulting SUDOKU puzzle.

The rules of Sudoku are simple.

Enter digits from 1 to 9 into the blank spaces.

Every row must contain one of each digit.

So must every column, and so must every 3x3 square.

Each Sudoku has a unique solution that can be reached logically without guessing.

A. $\lim_{x \rightarrow 1} 3x$

B. $\lim_{x \rightarrow 2} (2x + 5)$

C. $\lim_{x \rightarrow 2} (2x^2 - 2x + 4)$

D. $\lim_{x \rightarrow 3} \frac{x+2}{x-2}$

E. $\lim_{x \rightarrow 7} (9)$

F. $\lim_{x \rightarrow 4} \frac{-4(x^2 - 11x + 28)}{x^2 - 4x}$

G. $\lim_{x \rightarrow \frac{\pi}{2}} 2 \tan\left(\frac{x}{2}\right)$

H. $\lim_{x \rightarrow -2} \left(\frac{x^2 - 4}{x^2 + 4} - \frac{14}{x} \right)$

I. $\lim_{h \rightarrow 0} \left(\frac{(2+h)^2 - 2^2}{h} \right)$

J. $\lim_{x \rightarrow 2} \left(\frac{4-x^2}{3-\sqrt{x^2+5}} \right)$

K. $\lim_{k \rightarrow \infty} \left(\frac{10k-2}{2k+7} \right)$

L. $\lim_{x \rightarrow 4} \sqrt{25-x^2}$

M. $\lim_{x \rightarrow \pi} \left(12 \sin\left(\frac{x}{6}\right) \right)$

N. $\lim_{p \rightarrow \infty} \left(\frac{16p^2 - 10p - 2}{5 - 2p + 2p^2} \right)$

O. $\lim_{x \rightarrow 2} \left(\frac{x^2 - 4}{x - 2} \right)$

P. $\lim_{x \rightarrow 4} \left(\frac{x^2 - x - 12}{x - 4} \right)$

Q. $\lim_{x \rightarrow -1} \frac{2x^2 + 7x + 5}{x + 1}$

R. $\lim_{x \rightarrow 0} \frac{16(\sqrt{1+x} - 1)}{x}$

S. $\lim_{x \rightarrow -4} \frac{-3x - 23}{2x - 3}$

T. $\lim_{x \rightarrow 2} \left(\frac{x^2 - 1}{x - 1} \right)$

U. $\lim_{x \rightarrow 3} \left(\frac{2x^3 - 54}{x^2 - 9} \right)$

V. $\lim_{x \rightarrow -1} \left(\frac{2x^2 + 8x + 6}{x^2 + 3x + 2} \right)$

W. $\lim_{x \rightarrow 1} \left(\frac{2x - 2}{\sqrt{x^2 + 3} - 2} \right)$

$$\text{X. } \lim_{x \rightarrow +\infty} ((x^2 + 5) + (2 - x^2))$$

$$\text{Y. } \lim_{x \rightarrow 4} \frac{x^2 - 7x + 12}{x - 4}$$

$$\text{Z. } \lim_{x \rightarrow 1} \left(\frac{\frac{3x}{1-x}}{\frac{1}{1-x^2}} \right)$$

$$\text{a. } \lim_{x \rightarrow \infty} \left(\frac{2 - 2x^2 + 9x^4}{x^4 + 3x^3 - 2x} \right)$$

$$\text{b. } \lim_{x \rightarrow 3} \frac{-x^2 + 7x - 12}{x - 3}$$

A			B					
			C		D		E	F
G	H		I			J		
		K			L			
M	N					O	P	
		Q			R			
	S		T		U		V	
W	X	Y		Z				
				a		b		

Here is a blank SUDOKU board for you to use:

A 10x10 grid of squares. There are two thick black horizontal lines and two thick black vertical lines. The horizontal lines are positioned such that they intersect the vertical lines at the 3rd and 7th columns from the left. This creates a central rectangular area that is twice as wide as it is tall, surrounded by a white border.

Solution to the Sudoku With Limits Puzzle

A = 3

B = 9

C = 8

D = 5

E = 9

F = 3

G = 2

H = 7

I = 4

J = 6

K = 5

L = 3

M = 6

N = 8

O = 4

P = 7

Q = 3

R = 8

S = 1

T = 3

U = 9

V = 4

W = 4

X = 7

Y = 1

Z = 6

a = 9

b = 1

3	5	8	9	6	7	4	1	2
1	6	4	8	2	5	7	9	3
2	9	7	3	4	1	8	6	5
9	2	1	5	7	4	3	8	6
6	8	5	2	9	3	1	4	7
7	4	3	6	1	8	5	2	9
8	1	6	7	3	2	9	5	4
4	7	9	1	5	6	2	3	8
5	3	2	4	8	9	6	7	1