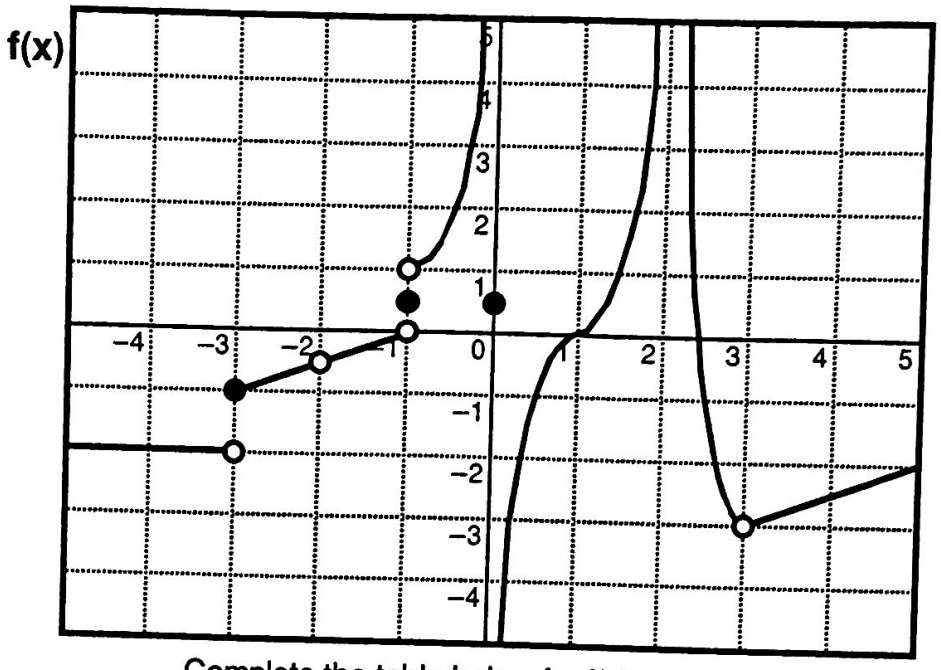
WHAT DID THE ASYMPTOTE SAY TO THE REMOVABLE DISCONTINUITY?



Complete the table below for f(x).

a	−3	−2	−1	0	1	2	3
f(a)	1) −1	5) None	9) .5	13) .5	17) 0	21) none	25) none
$\lim_{x \to a^-} f(x)$	2) −2	6) −.5	10) 0	14) ∞	18) 0	22) ∞	26) −3
$\lim_{x \to a^+} f(x)$	3) −1	7) −.5	11) 1	15) −∞	19) 0	23) ∞	27) −3
$\lim_{x \to a} f(x)$	4) none	8) −.5	12) none	16) none	20) 0	24) ∞	28) −3

29) Give the **right hand limit** as x approaches **−5**? −2

30) Give the **left hand limit** as x approaches **5**? −2

31) For what integer value in the above table is f(x) continuous? 1

32) f(x) has a removable discontinuity (hole) when the x value is 3 and when the x value is **(?)**. −2

33) f(x) is not defined at the vertical asymptote **x = (?)**. 2

34) On the open interval (−5, 5), f(x) has **(?)** discontinuities. 6

A.	−3
D.	0.5
E.	−0.5
H.	0
I.	1
L.	−1
M.	6
N.	−2
R.	2
O.	∞
T.	none
U.	−∞

D	O	N	'	T
9	22	32		4

H	A	N	D
17	27	2	13

T	H	A	T
25	10	28	16

H	O	L	I	E	R
19	23	1	31	6	33

T	H	A	N
5	18	26	29

T	H	O	U
12	20	24	15

L	I	N	E
3	11	30	8

T	O
21	14

M	E
34	7

WHAT DID THE COLLEGE FRESHMAN WHO FAILED HIS FIRST CALCULUS TEST HAVE IN COMMON WITH THE COLLEGE FRESHMAN WHO WAS FINED FOR DRIVING 60 MI/HR IN A 30 MI/HR ZONE?

Match each expression with its limit.

1) $\lim_{x\to 3} x-1 =$ 2	2) $\lim_{x\to 2} \frac{x-2}{x} =$ 0	3) $\lim_{z\to 1} z^2+3z-2 =$ 2
4) $\lim_{z\to 2^-} \frac{1}{z-2} =$ $-\infty$	5) $\lim_{z\to 2^+} \frac{1}{z-2} =$ ∞	6) $\lim_{z\to 2} \frac{1}{z-2} =$ none
7) $\lim_{x\to 3} \frac{x^2-2x-3}{x-3} =$ $\frac{(x+1)(x-3)}{x-3} = 4$	8) $\lim_{x\to -1} \frac{x^2-2x-3}{x-3} =$ 0	9) $\lim_{t\to 3} \lvert t-3\rvert =$ 0
10) $\lim_{x\to 1} \frac{x^2-1}{x-1} =$ $x+1$ 2	11) $\lim_{x\to -1} \frac{x^2-1}{x-1} =$ 0	12) $\lim_{x\to 1} \frac{x-1}{x^2-1} =$ $\frac{1}{x+1}$ $\frac{1}{2}$
13) $\lim_{x\to -1} \frac{x-1}{x^2-1} =$ $\frac{1}{x+1}$ $\frac{1}{0}$ None $+\infty$ $-\infty$	14) $\lim_{y\to 5} \frac{y^2-2y-8}{y-4} =$ 7	15) $\lim_{y\to 4} \frac{y^2-2y-8}{y-4} =$ $(y+2)(y-4)$ 6
16) $\lim_{s\to\infty} \frac{s}{2s+1} =$ $\frac{1}{2}$	17) $\lim_{s\to\infty} \frac{2s}{3s+1} =$ $\frac{2}{3}$	18) $\lim_{s\to\infty} \frac{s^{2/5}}{s+1/5} =$ $\frac{s}{1+1/5}$ ∞
19) $\lim_{s\to -\infty} \frac{s^2}{s+1} =$ $-\infty$	20) $\lim_{s\to -\infty} \frac{s^3}{s+1} =$ $+\infty$	21) $\lim_{y\to\infty} \frac{2y^2+y-5}{4y^2+5y+2} =$ $\frac{1}{2}$
22) $\lim_{x\to 1} \frac{1-x}{1-\sqrt{x}} =$ $(1+\sqrt{x})(1-\sqrt{x})$ 2	23) $\lim_{x\to 2} \frac{\frac{1}{x}-\frac{1}{2}}{x-2} =$ $\frac{2-x}{(2x)(x-2)}$ $-1/4$	24) $\lim_{r\to 4} \frac{\sqrt{r-3}-1}{r-4} =$ $\frac{1}{2}$
25) $\lim_{x\to 0^-} y = \begin{cases} 2x-1, & x\le 0 \\ 1-2x, & x>0 \end{cases}$ -1	26) $\lim_{x\to 0^+} y = \begin{cases} 2x-1, & x\le 0 \\ 1-2x, & x>0 \end{cases}$ 1	27) $\lim_{x\to 0} y = \begin{cases} 2x-1, & x\le 0 \\ 1-2x, & x>0 \end{cases}$ None

Limits.

A. -4	D. 4	E. 0	H. $-\infty$	I. $\frac{1}{2}$	K. 6	L. $-\frac{1}{4}$
M. 7	N. none	R. 1	S. ∞	T. 2	U. $\frac{2}{3}$	W. -1

N	E	I	T	H	E	R
6	11	24	3	4	2	26

S	T	U	D	E	N	T
5	22	17	7	8	27	1

K	N	E	W
15	13	9	25

H	I	S
19	16	20

L	I	M	I	T	S
23	21	14	12	10	18

24) $\lim_{r\to 4} \frac{r-3-1}{(r-4)(\sqrt{r-3}+1)} = \frac{1}{2}$