

1. Use the values in the table to approximate $\lim_{x \rightarrow -1.8} f(x)$

x	-1.81	-1.801	-1.8001	-1.8	-1.7999	-1.799	-1.79
f(x)	3.18	3.05	3.001		2.998	2.873	2.656

$\lim_{x \rightarrow -1.8^-} f(x) = 3$ $\lim_{x \rightarrow -1.8^+} f(x) = 3$
 $\therefore \lim_{x \rightarrow -1.8} f(x) = 3$

2. Find $\lim_{x \rightarrow \text{ANS}} \frac{x-3}{x^2-9}$ numerically.

x	2.9	2.99	2.999	3	3.001	3.01	3.1
f(x)	.169	.167	.167		.167	.166	.164

Find $\lim_{x \rightarrow 3} \frac{x-3}{x^2-9} \rightarrow \lim_{x \rightarrow 3} \frac{x-3}{x^2-9} = .167 = \lim_{x \rightarrow 3^+} \frac{x-3}{x^2-9} = .167$
 $\therefore \lim_{x \rightarrow 3} \frac{x-3}{x^2-9} = .167$ or $\frac{1}{6}$

3. Find $\lim_{x \rightarrow 0} \frac{x - \text{ANS}(48)}{x-2}$ numerically.

x	-.1	-.01	-.001	0	.001	.01	.1
f(x)	3.857	3.985	3.999		4.002	4.015	4.158

Find $\lim_{x \rightarrow 0} \frac{x - (\frac{1}{2})(48)}{x-2} = \lim_{x \rightarrow 0} \frac{x-8}{x-2}$
 $\lim_{x \rightarrow 0^-} \frac{x-8}{x-2} = 4 = \lim_{x \rightarrow 0^+} \frac{x-8}{x-2} = 4$
 $\therefore \lim_{x \rightarrow 0} \frac{x-8}{x-2} = 4$

4. Find $\lim_{x \rightarrow \text{ANS}^-} f(x)$ numerically.

x	2.9	2.99	3	3.01	3.1	3.9	3.99	4	4.01	4.1
f(x)	-3.968	-3.992		-4.1	-4.121	-2.978	-2.999		5.993	5.92

Find $\lim_{x \rightarrow 4^-} f(x)$.

Limit as x approaches 4 from left

4 from left

$\lim_{x \rightarrow 4^-} f(x) = -3$

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5. Find $\lim_{x \rightarrow -ANS^+} f(x)$ numerically.

x	2.9	2.99	3	3.01	3.1	3.9	3.99	4	4.01	4.1
f(x)	-0.12	-0.04		-0.998	-0.989	-2.978	-2.999		5.993	5.92

Find $\lim_{x \rightarrow -3^+} f(x)$.

Limit as x approaches 3 from right

3 from right

$$\lim_{x \rightarrow 3^+} f(x) = -1$$

6. Use the values in the table to approximate $\lim_{x \rightarrow ANS} f(x)$

x	-1.01	-1.001	-1	-0.99	-0.999	-0.1	-0.001	0	.001	.01
f(x)	4.25	4.298		4.298	4.38	5.925	5.98		5.99	5.96

Find $\lim_{x \rightarrow -1} f(x)$.

$$\lim_{x \rightarrow -1^-} f(x) = 4.3 = \lim_{x \rightarrow -1^+} f(x) = 4.3$$

$$\therefore \lim_{x \rightarrow -1} f(x) = 4.3$$

7. Use the values in the table to approximate $\lim_{x \rightarrow ANS} f(x)$

x	4.29	4.299	4.3	4.31	4.301	-5.99	-5.999	6	6.001	6.01
f(x)	3.015	3.001		2.989	2.975	3.975	3.999		3.998	3.975

Find $\lim_{x \rightarrow 4.3} f(x)$.

$$\lim_{x \rightarrow 4.3^-} f(x) = 3 = \lim_{x \rightarrow 4.3^+} f(x) = 3$$

$$\therefore \lim_{x \rightarrow 4.3} f(x) = 3$$

8. Make a table where $\lim_{x \rightarrow 5^-} f(x) = ANS$ and $\lim_{x \rightarrow 5^+} f(x) = 2(ANS)$

x	4.9	4.99	4.999	5	5.001	5.01	5.1
f(x)	3.012	3.002	3.001		5.999	5.989	5.984

Sample Answer... could have other options as long

as $\lim_{x \rightarrow 5^-} f(x) = 3$
 $\lim_{x \rightarrow 5^+} f(x) = 6$