

## Approximating Limit from Table

**MULTIPLE CHOICE.** Choose the one alternative that best completes the statement or answers the question.

Use the table to find the indicated limit.

1) If  $f(x) = \frac{\sin(6x)}{x}$ , find  $\lim_{x \rightarrow 0} f(x)$ . 1) \_\_\_\_\_

x	-0.1	-0.01	-0.001	0.001	0.01	0.1
f(x)		5.99640065			5.99640065	

- A) limit does not exist  
C) limit = 5.5

- B) limit = 6  
D) limit = 0

2) If  $f(x) = \frac{x-4}{\sqrt{x}-2}$ , find  $\lim_{x \rightarrow 4} f(x)$ . 2) \_\_\_\_\_

x	3.9	3.99	3.999	4.001	4.01	4.1
f(x)						

A)

x	3.9	3.99	3.999	4.001	4.01	4.1
f(x)	5.07736	5.09775	5.09978	5.10022	5.10225	5.12236

; limit = 5.10

B)

x	3.9	3.99	3.999	4.001	4.01	4.1
f(x)	1.19245	1.19925	1.19993	1.20007	1.20075	1.20745

; limit = 1.20

C)

x	3.9	3.99	3.999	4.001	4.01	4.1
f(x)	3.97484	3.99750	3.99975	4.00025	4.00250	4.02485

; limit = 4.0

D)

x	3.9	3.99	3.999	4.001	4.01	4.1
f(x)	1.19245	1.19925	1.19993	1.20007	1.20075	1.20745

; limit =  $\infty$

Use the table of values of f to estimate the limit.

3) Let  $f(\theta) = \frac{\cos(6\theta)}{\theta}$ , find  $\lim_{\theta \rightarrow 0} f(\theta)$ . 3) \_\_\_\_\_

x	-0.1	-0.01	-0.001	0.001	0.01	0.1
f(θ)	-8.2533561					8.2533561

- A) limit = 6  
C) limit = 0

- B) limit = 8.2533561  
D) limit does not exist

4) Let  $f(x) = \frac{\sin(2x)}{x}$ , find  $\lim_{x \rightarrow 0} f(x)$ . 4) \_\_\_\_\_

x	-0.1	-0.01	-0.001	0.001	0.01	0.1
f(x)		1.99986667			1.99986667	

- A) limit = 1.5  
C) limit = 0

- B) limit does not exist  
D) limit = 2

Answer Key

Testname: APPROXIMATING LIMIT FROM TABLE

- 1) B
- 2) C
- 3) D
- 4) D