

VERSATILE #1 ~ Evaluating Limits

1. Use the table of values to estimate $\lim_{x \rightarrow 1} f(x)$. 1. _____

x	0.9	0.99	0.999	1.001	1.01	1.1
$f(x)$	1.9	1.99	1.999	2.001	2.01	2.1

Use a graph to decide whether each limit exists. If a limit exists, find its value.

2. $\lim_{x \rightarrow 0} \frac{\sin(3x + 7e)}{3x + 7e} = \underline{\hspace{2cm}}$

3. $\lim_{x \rightarrow 0} \frac{1 - \cos(x)}{x} = \underline{\hspace{2cm}}$

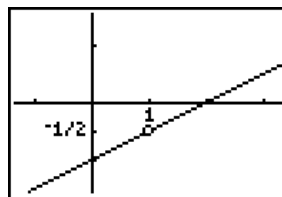
4. $\lim_{x \rightarrow 2} \frac{|x - 2|}{x - 2} = \underline{\hspace{2cm}}$

5. $\lim_{x \rightarrow 1^-} \frac{1}{x - 1} = \underline{\hspace{2cm}}$

6. $\lim_{x \rightarrow 1^-} \frac{-1}{x - 1} = \underline{\hspace{2cm}}$

7. $\lim_{x \rightarrow 1} f(x) = \underline{\hspace{2cm}}$

8. $\lim_{x \rightarrow -11.5} [x] = \underline{\hspace{2cm}}$



Find the limits analytically.

9. $\lim_{x \rightarrow -1} \frac{x^2 - 1}{x + 1} = \underline{\hspace{2cm}}$

10. $\lim_{x \rightarrow -2} \frac{x^3 + 8}{x + 2} = \underline{\hspace{2cm}}$

11. $\lim_{x \rightarrow 0} \frac{\sqrt{x+1} - 1}{x} = \underline{\hspace{2cm}}$

12. $\lim_{x \rightarrow 0} \frac{\sqrt[3]{8+x} - 2}{x} = \underline{\hspace{2cm}}$

Answer Choices

A	-12	B	1/12	C	1/2	D	$-\infty$	E	12	F	-1/2
G	1	H	∞	I	-2	J	0	K	2	L	DNE

LIMITS



1. $\lim_{x \rightarrow 0} \frac{\sin x}{x} =$

2. $\lim_{x \rightarrow \infty} (1 + 1/x)^x =$

3. $\lim_{x \rightarrow 2} \frac{x^2 + 3x - 10}{x - 2} =$

4. $\lim_{x \rightarrow 0^+} \ln|x| =$

5. $\lim_{x \rightarrow 1} \frac{x^3 - 1}{x - 1} =$

6. $\lim_{x \rightarrow \infty} \frac{4 - 2x}{x - 1} + \frac{3x}{x^2 + 1} =$

7. $\lim_{x \rightarrow 0} 2x^2 + 6x - 5 =$

8. $\lim_{x \rightarrow \infty} \frac{x^2 + 2x + 5}{4x - x^2 - 4} =$

9. $\lim_{x \rightarrow \infty} \frac{x^2 + 7x + 2}{4x^3 + 2x + 12} =$

10. $\lim_{x \rightarrow 0} \frac{4 \tan x}{x} =$

11. $\lim_{x \rightarrow -1^+} \frac{1}{x + 1} =$

12. $\lim_{x \rightarrow 0^+} \frac{3}{x} =$

ANSWER BOX

A 7	B 0	C DNE	D 1	E -2	F <i>e</i>
G 3	H ∞	I -5	J 4	K $-\infty$	L -1