

$$1) \lim_{x \rightarrow 0} \frac{x^3 + 5x^2}{x^2} = \left( \text{of the form } \frac{0}{0} \right)$$

☐ a 5                      ☐ b -5                      ☐ c -10                      ☐ d 0

$$2) \lim_{x \rightarrow 6} \frac{x-6}{x^2-36} = \left( \text{of the form } \frac{0}{0} \right)$$

☐ a 12                      ☐ b  $\frac{1}{12}$                       ☐ c  $\frac{1}{8}$                       ☐ d 0

$$3) \lim_{x \rightarrow 1} \frac{x-1}{\ln x} = \left( \text{of the form } \frac{0}{0} \right)$$

☐ a  $\infty$                       ☐ b 1                      ☐ c does not exist                      ☐ d 0

$$4) \lim_{x \rightarrow \infty} \frac{\ln x}{e^x} = \left( \text{of the form } \frac{\infty}{\infty} \right) \left( \lim_{x \rightarrow \infty} \ln x = \infty \right)$$

☐ a  $\infty$                       ☐ b 1                      ☐ c does not exist                      ☐ d 0

$$5) \lim_{x \rightarrow -6} \frac{x+6}{x^2-36} = \left( \text{of the form } \frac{0}{0} \right)$$

☐ a -12                      ☐ b  $-\frac{1}{8}$                       ☐ c  $-\frac{1}{12}$                       ☐ d 0

$$6) \lim_{x \rightarrow 3} \frac{x^3-27}{x-3} = \left( \text{of the form } \frac{0}{0} \right)$$

☐ a 27                      ☐ b  $\frac{1}{27}$                       ☐ c 18                      ☐ d does not exist

$$7) \lim_{x \rightarrow \infty} \frac{x^2}{2e^x} = \left( \text{of the form } \frac{\infty}{\infty} \right) \left( \lim_{x \rightarrow \infty} e^x = \infty \right)$$

☐ a  $\infty$                       ☐ b 1                      ☐ c does not exist                      ☐ d 0

$$8) \lim_{x \rightarrow -2} \frac{x+2}{x^3+8} = \left( \text{of the form } \frac{0}{0} \right)$$

☐ a 12                      ☐ b  $\frac{1}{12}$                       ☐ c  $\frac{1}{8}$                       ☐ d does not exist

$$9) \lim_{x \rightarrow 0^+} \frac{x - \tan x}{x \tan x} = \left( \text{of the form } \frac{0}{0} \right)$$

☐ a  $-\infty$                       ☐ b 0                      ☐ c 1                      ☐ d  $\infty$

10)	$\lim_{x \rightarrow 1} \frac{\ln x}{\sin(\pi x)} =$	$\left( \text{of the form } \frac{0}{0} \right)$					
<input type="checkbox"/> a	$\frac{1}{\pi}$	<input type="checkbox"/> b	1	<input type="checkbox"/> c	$-\frac{1}{\pi}$	<input type="checkbox"/> d	0
11)	$\lim_{x \rightarrow 0} \frac{1 - \cos x}{x^2} =$	$\left( \text{of the form } \frac{0}{0} \right)$					
<input type="checkbox"/> a	1	<input type="checkbox"/> b	$\frac{1}{2}$	<input type="checkbox"/> c	$\infty$	<input type="checkbox"/> d	0
12)	$\lim_{x \rightarrow 0} \frac{\sin^{-1} x}{\sin x} =$	$\left( \text{of the form } \frac{0}{0} \right)$					
<input type="checkbox"/> a	-1	<input type="checkbox"/> b	1	<input type="checkbox"/> c	does not exist	<input type="checkbox"/> d	0
13)	$\lim_{x \rightarrow \infty} \frac{3^x}{6^x} =$	$\left( \text{of the form } \frac{\infty}{\infty} \right) \left( \lim_{x \rightarrow \infty} a^x = \infty, a > 1, \lim_{x \rightarrow \infty} a^x = 0, 0 < a < 1 \right)$					
<input type="checkbox"/> a	$\infty$	<input type="checkbox"/> b	1	<input type="checkbox"/> c	does not exist	<input type="checkbox"/> d	0
14)	$\lim_{x \rightarrow \infty} \frac{2^x}{3^x} =$	$\left( \text{of the form } \frac{\infty}{\infty} \right) \left( \lim_{x \rightarrow \infty} a^x = \infty, a > 1, \lim_{x \rightarrow \infty} a^x = 0, 0 < a < 1 \right)$					
<input type="checkbox"/> a	$\infty$	<input type="checkbox"/> b	1	<input type="checkbox"/> c	does not exist	<input type="checkbox"/> d	0
15)	$\lim_{x \rightarrow \infty} \frac{e^x}{x^2} =$	$\left( \text{of the form } \frac{\infty}{\infty} \right) \left( \lim_{x \rightarrow \infty} e^x = \infty \right)$					
<input type="checkbox"/> a	$\infty$	<input type="checkbox"/> b	1	<input type="checkbox"/> c	does not exist	<input type="checkbox"/> d	0
16)	$\lim_{x \rightarrow 4} \frac{x^2 - 3x - 4}{x - 4} =$	$\left( \text{of the form } \frac{0}{0} \right)$					
<input type="checkbox"/> a	-5	<input type="checkbox"/> b	8	<input type="checkbox"/> c	5	<input type="checkbox"/> d	does not exist
17)	$\lim_{x \rightarrow 3} \frac{x^2 + 4x - 21}{x^2 - 8x + 15} =$	$\left( \text{of the form } \frac{0}{0} \right)$					
<input type="checkbox"/> a	-5	<input type="checkbox"/> b	$-\frac{1}{5}$	<input type="checkbox"/> c	5	<input type="checkbox"/> d	does not exist
18)	$\lim_{x \rightarrow \infty} \frac{\ln x}{\sqrt[3]{x}} =$	$\left( \text{of the form } \frac{\infty}{\infty} \right) \left( \lim_{x \rightarrow \infty} \ln x = \infty \right)$					
<input type="checkbox"/> a	$\infty$	<input type="checkbox"/> b	3	<input type="checkbox"/> c	does not exist	<input type="checkbox"/> d	0
19)	$\lim_{x \rightarrow 2} \frac{\sqrt[3]{x + 6} - 2}{x - 2} =$	$\left( \text{of the form } \frac{0}{0} \right)$					
<input type="checkbox"/> a	$\frac{1}{12}$	<input type="checkbox"/> b	12	<input type="checkbox"/> c	0	<input type="checkbox"/> d	does not exist

20) $\lim_{x \rightarrow 0} \frac{\sqrt{x+25}-5}{x} = \left( \text{of the form } \frac{0}{0} \right)$
<input type="checkbox"/> $a$ $-10$ <input type="checkbox"/> $b$ $-\frac{1}{10}$ <input type="checkbox"/> $c$ $10$ <input type="checkbox"/> $d$ $\frac{1}{10}$
21) $\lim_{x \rightarrow 0} \frac{1-\cos x}{x^2+x} = \left( \text{of the form } \frac{0}{0} \right)$
<input type="checkbox"/> $a$ $1$ <input type="checkbox"/> $b$ $\frac{1}{2}$ <input type="checkbox"/> $c$ $\infty$ <input type="checkbox"/> $d$ $0$
22) $\lim_{x \rightarrow 2} \frac{x-2}{2-\sqrt{6-x}} = \left( \text{of the form } \frac{0}{0} \right)$
<input type="checkbox"/> $a$ does not exist <input type="checkbox"/> $b$ $0$ <input type="checkbox"/> $c$ $\frac{1}{4}$ <input type="checkbox"/> $d$ $4$
23) $\lim_{x \rightarrow 3} \frac{1-\sqrt{x-2}}{2-\sqrt{x+1}} = \left( \text{of the form } \frac{0}{0} \right)$
<input type="checkbox"/> $a$ does not exist <input type="checkbox"/> $b$ $0$ <input type="checkbox"/> $c$ $\frac{1}{2}$ <input type="checkbox"/> $d$ $2$
24) $\lim_{x \rightarrow 4} \frac{x^2-6x+8}{x^2+x-20} = \left( \text{of the form } \frac{0}{0} \right)$
<input type="checkbox"/> $a$ does not exist <input type="checkbox"/> $b$ $0$ <input type="checkbox"/> $c$ $\frac{2}{9}$ <input type="checkbox"/> $d$ $1$
25) $\lim_{x \rightarrow -2} \frac{x^3+8}{x^2-x-6} = \left( \text{of the form } \frac{0}{0} \right)$
<input type="checkbox"/> $a$ does not exist <input type="checkbox"/> $b$ $-\frac{12}{5}$ <input type="checkbox"/> $c$ $-\frac{8}{5}$ <input type="checkbox"/> $d$ $-12$
26) $\lim_{x \rightarrow -2} \frac{4x^2+6x-4}{2x^2-8} = \left( \text{of the form } \frac{0}{0} \right)$
<input type="checkbox"/> $a$ does not exist <input type="checkbox"/> $b$ $5$ <input type="checkbox"/> $c$ $\frac{5}{4}$ <input type="checkbox"/> $d$ $-\frac{5}{4}$
27) $\lim_{x \rightarrow 1} \frac{\sqrt{2x+2}-2}{\sqrt{3x-2}-1} = \left( \text{of the form } \frac{0}{0} \right)$
<input type="checkbox"/> $a$ $-\frac{3}{2}$ <input type="checkbox"/> $b$ $\frac{2}{3}$ <input type="checkbox"/> $c$ $\frac{1}{3}$ <input type="checkbox"/> $d$ $-\frac{1}{3}$
28) $\lim_{x \rightarrow -1} \frac{x^2-5x-6}{x+1} = \left( \text{of the form } \frac{0}{0} \right)$
<input type="checkbox"/> $a$ $0$ <input type="checkbox"/> $b$ $1$ <input type="checkbox"/> $c$ does not exist <input type="checkbox"/> $d$ $-7$

29)	$\lim_{x \rightarrow 0} \frac{(x+3)^{-1} - 3^{-1}}{x}$	(of the form $\frac{0}{0}$ )	<input type="checkbox"/> A $-9^{-1}$	<input type="checkbox"/> B 0	<input type="checkbox"/> C $-3^{-1}$	<input type="checkbox"/> D $3^{-1}$
30)	$\lim_{x \rightarrow \infty} \frac{4x^5 + 6x - 4}{2x^5 - 8}$	= (of the form $\frac{\infty}{\infty}$ )	<input type="checkbox"/> a does not exist	<input type="checkbox"/> b $-2$	<input type="checkbox"/> c 2	<input type="checkbox"/> d $\infty$
31)	$\lim_{x \rightarrow \infty} \frac{4x^4 + 6x - 4}{2x^5 - 8}$	= (of the form $\frac{\infty}{\infty}$ )	<input type="checkbox"/> a $-\infty$	<input type="checkbox"/> b 0	<input type="checkbox"/> c 2	<input type="checkbox"/> d $\infty$
32)	$\lim_{x \rightarrow 0^+} \frac{\ln x}{x^{-1}}$	= (of the form $\frac{-\infty}{\infty}$ ) $\left( \lim_{x \rightarrow 0^+} \ln x = -\infty \right)$	<input type="checkbox"/> a 1	<input type="checkbox"/> b 0	<input type="checkbox"/> c $-\infty$	<input type="checkbox"/> d $\infty$
33)	$\lim_{x \rightarrow 0^+} \frac{\ln(x+1)}{x}$	= (of the form $\frac{0}{0}$ )	<input type="checkbox"/> a 1	<input type="checkbox"/> b 0	<input type="checkbox"/> c $-\infty$	<input type="checkbox"/> d $\infty$
34)	$\lim_{x \rightarrow \infty} \frac{\ln x}{x}$	= (of the form $\frac{\infty}{\infty}$ ) $\left( \lim_{x \rightarrow \infty} \ln x = \infty \right)$	<input type="checkbox"/> a 1	<input type="checkbox"/> b 0	<input type="checkbox"/> c $-\infty$	<input type="checkbox"/> d $\infty$
35)	$\lim_{x \rightarrow 1^+} \frac{1-x+x \ln x}{(x-1) \ln x}$	= (of the form $\frac{0}{0}$ )	<input type="checkbox"/> a $2^{-1}$	<input type="checkbox"/> b 0	<input type="checkbox"/> c $-\infty$	<input type="checkbox"/> d $\infty$
36)	$\lim_{x \rightarrow \infty} \frac{3^x}{2^x}$	= (of the form $\frac{\infty}{\infty}$ ) $\left( \lim_{x \rightarrow \infty} a^x = \infty, a > 1, \lim_{x \rightarrow \infty} a^x = 0, 0 < a < 1 \right)$	<input type="checkbox"/> a $\infty$	<input type="checkbox"/> b 1	<input type="checkbox"/> c $-\infty$	<input type="checkbox"/> d 0
37)	$\lim_{x \rightarrow 0} \frac{e^x - 1 - x}{x^3}$	= (of the form $\frac{0}{0}$ )	<input type="checkbox"/> a $\infty$	<input type="checkbox"/> b 0	<input type="checkbox"/> c 1	<input type="checkbox"/> d does not exist
38)	$\lim_{x \rightarrow 0} \frac{\tan^{-1} x}{x}$	= (of the form $\frac{0}{0}$ )	<input type="checkbox"/> a $-1$	<input type="checkbox"/> b 0	<input type="checkbox"/> c 1	<input type="checkbox"/> d does not exist
39)	$\lim_{x \rightarrow 0^+} \frac{\sqrt{x} - x}{x \sqrt{x}}$	= (of the form $\frac{0}{0}$ )	<input type="checkbox"/> a 1	<input type="checkbox"/> b 0	<input type="checkbox"/> c $-\infty$	<input type="checkbox"/> d $\infty$