

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

☐ a 5 Θ

☐ 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 $\frac{1}{12} \Theta$

☐ 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 ∞

☐ b 1 Θ

☐ 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 ∞

☐ b 1

☐ c does not exist

☐ d 0 Θ

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

☐ a -12

☐ b $-\frac{1}{8}$

☐ c $-\frac{1}{12} \Theta$

☐ d 0

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

☐ a 27 Θ

☐ 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 ∞

☐ b 1

☐ c does not exist

☐ d 0 Θ

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

☐ a 12

☐ b $\frac{1}{12} \Theta$

☐ 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 Θ

☐ c 1

☐ d ∞

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

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

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

