

$$① \frac{0}{0} \rightarrow \frac{1 \cdot x - 1}{1 \cdot x - 1} = \left(\frac{1}{1} \right) \quad \left. \right\} \quad ② = \lim_{x \rightarrow 0} \frac{-2x + 1 - 2x - 1}{x} = \frac{-4x}{x} = (-4)$$

$$③ \frac{0}{0} \rightarrow \frac{(\sqrt{x-2})(\sqrt{x+2})}{(\sqrt{x-2})} = \sqrt{x+2} \xrightarrow{x \rightarrow 4} \left(\frac{4}{4} \right) \quad \left. \right\} \quad ④ = \frac{0}{0} \rightarrow \frac{x^2 - 2x}{x(x-2)(x+\frac{2}{x})} = \frac{x(x-2)}{x(x-2)(x+\frac{2}{x})} = \frac{1}{x+\frac{2}{x}} \xrightarrow{x \rightarrow 1} \left(\frac{1}{1+2} \right)$$

$$⑤ \frac{0}{0} \rightarrow \frac{1-x}{x-1} \xrightarrow{x \rightarrow 2} \left(\frac{-1}{1} \right) \quad \left. \right\} \quad ⑥ \frac{0}{0} \rightarrow \frac{3x^2 + 5x - 12}{\Delta x + \sqrt{x-2}} \xrightarrow{x \rightarrow 4} \frac{3(4)^2 + 5(4) - 12}{\Delta x + \sqrt{4-2}} = \frac{76}{\Delta x + \sqrt{2}} \xrightarrow{\Delta x \rightarrow 0} \frac{76}{\sqrt{2}} = \frac{38\sqrt{2}}{1}$$

$$⑦ \frac{0}{0} \rightarrow \frac{3x + \sqrt{x} - 4}{x-1} \times \frac{3}{4} = \frac{3(\sqrt{x-1})(\sqrt{x+\frac{4}{3}})}{(\sqrt{x-1})(\sqrt{x+1})} \times \frac{3}{4} = \frac{9 \times \frac{3}{4}}{4 \times 2} = \left(\frac{27}{8} \right)$$

$x = t^2 \rightarrow \frac{-1 \pm \sqrt{1+4t}}{t} \xrightarrow{t \rightarrow 1} \left(\frac{1}{2} \right)$

$$⑧ \frac{0}{0} \rightarrow \frac{(1+\cos x)(1+\cos^2 x - \cos x)}{1-\cos^2 x} = \left(\frac{3}{2} \right)$$

$1-\cos^2 x \rightarrow (1-\cos x)(1+\cos x)$

$$⑨ \frac{0}{0} \rightarrow \frac{e^{-5}}{e} = \frac{-1}{\cos \frac{\pi}{4}} = \frac{-1}{\frac{\sqrt{2}}{2}} = (-\sqrt{2}) \quad \left. \right\} \quad ⑩ \frac{0}{0} \rightarrow \frac{\frac{-1}{\cos \frac{\pi}{4}}}{\frac{1}{1}} = \frac{-1}{\cos \frac{\pi}{4}} = \frac{-1}{\frac{\sqrt{2}}{2}} = (-\sqrt{2})$$