

$$1. \lim_{x \rightarrow 2} \left(\frac{3x^3 + 1}{5x^2 + 5} \right)^{\frac{x+2}{x^2-5x+6}}$$

$$2. \lim_{x \rightarrow -1} \left(\frac{2x^2 + 3x + 5}{x^2 + x + 4} \right)^{\frac{x}{x^2+3x+2}}$$

$$3. \lim_{x \rightarrow 0} \left(\frac{x^2 + x + 3}{x^2 - 3x + 3} \right)^{\frac{x+1}{x}}$$

$$4. \lim_{x \rightarrow 0} \frac{\cos 3x - \cos 5x}{\operatorname{tg}^2 3x}$$

$$5. \lim_{x \rightarrow \frac{\pi}{6}} \frac{\sqrt{3} - 2 \cos x}{12x - 2\pi}$$

$$6. \lim_{x \rightarrow 0} \frac{\sin 7x - \sin x}{3x^2}$$