

組 番 ふりがな 氏名 \_\_\_\_\_

1. 次の極限值を求めよ。

$$(1) \lim_{x \rightarrow \frac{1}{2}} \left( \frac{1}{x-1} - \frac{1}{x} \right)$$

答 \_\_\_\_\_

$$(2) \lim_{x \rightarrow 1} \frac{x^3 - 1}{x - 1}$$

答 \_\_\_\_\_

$$(3) \lim_{x \rightarrow \infty} (\sqrt{x^2 + 7x} - x)$$

答 \_\_\_\_\_

$$(4) \lim_{x \rightarrow \infty} \sin \left( \frac{\pi x}{x+1} \right)$$

答 \_\_\_\_\_

$$(5) \lim_{x \rightarrow \frac{\pi}{4}} (2 + \cos x)^2$$

答 \_\_\_\_\_

$$(6) \lim_{x \rightarrow 0} \frac{x}{\sqrt{1+x} - \sqrt{1-x}}$$

答 \_\_\_\_\_

$$(7) \lim_{a \rightarrow 1} \frac{a^4 - 1}{a - 1}$$

答 \_\_\_\_\_

$$(8) \lim_{x \rightarrow 1} \frac{\sqrt{6} - \sqrt{x+5}}{x-1}$$

答 \_\_\_\_\_

$$(9) \lim_{x \rightarrow \infty} (\log(x+1) - \log x)$$

答 \_\_\_\_\_

$$(10) \lim_{x \rightarrow \infty} \frac{x^3 - 5x}{9x^3 + x^2}$$

答 \_\_\_\_\_