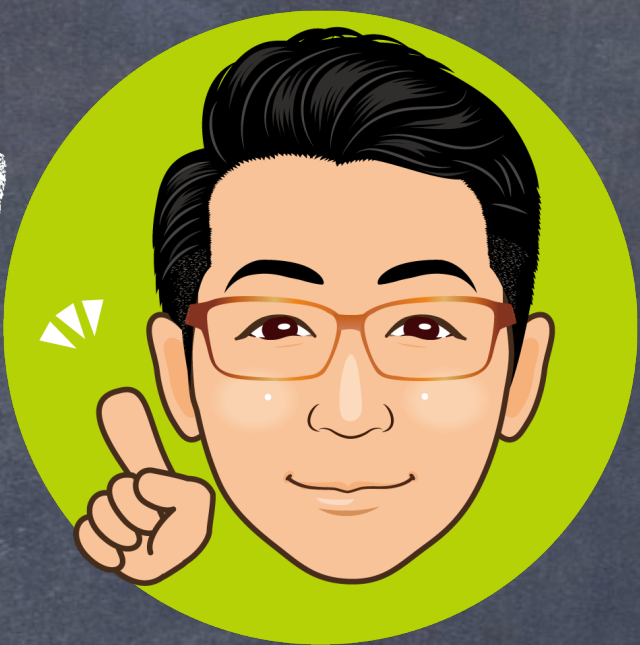テーマ：
関数の極大・極小②

(ex)
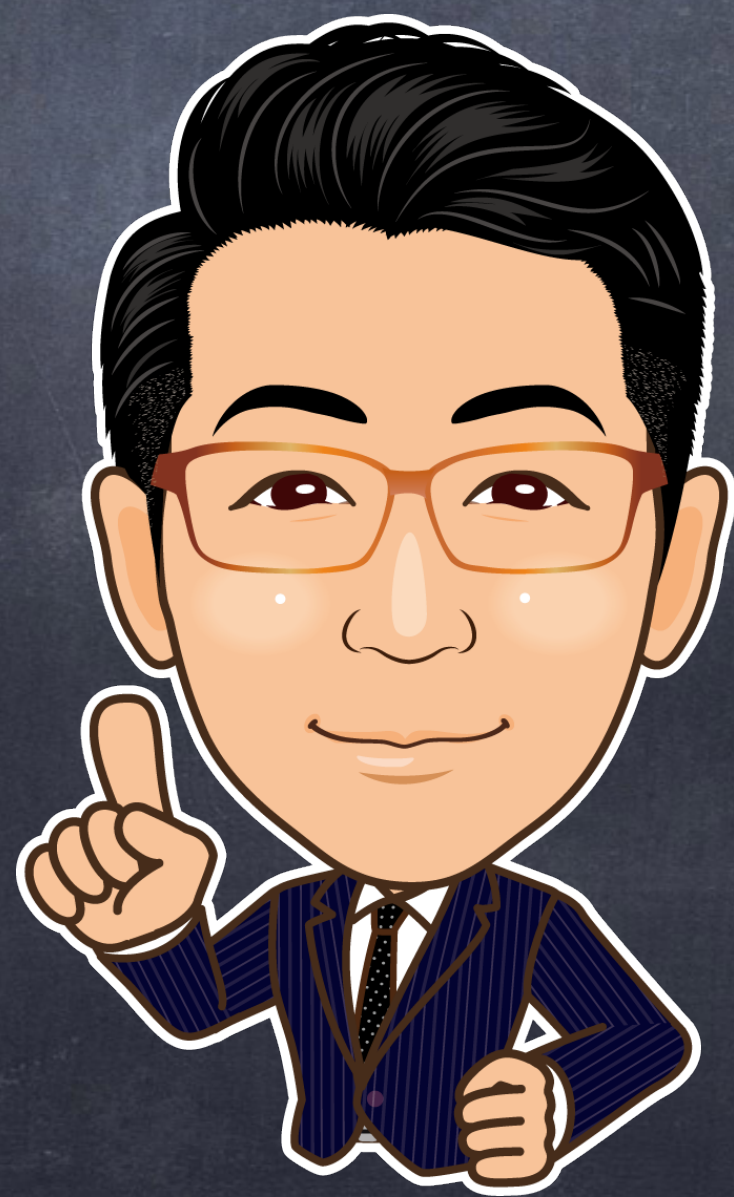
$$f(x) = \frac{x^2 + x + a}{x - 1} \quad \text{が} \quad x = -1 \text{で 極値をもつ}$$

<方針>

極値 $\Rightarrow f'(a) = 0$

$$f'(x) = \frac{(2x+1)(x-1) - (x^2 + x + a) \cdot 1}{(x-1)^2}$$

$$f'(x) = \frac{x^2 - 2x - 1 - a}{(x-1)^2}$$

$f'(-1) = 0$ より

$$\frac{2 - a}{4} = 0$$

$$a = 2$$

このとき

$$f(x) = \frac{x^2 + x + 2}{x - 1}$$

(Ev)

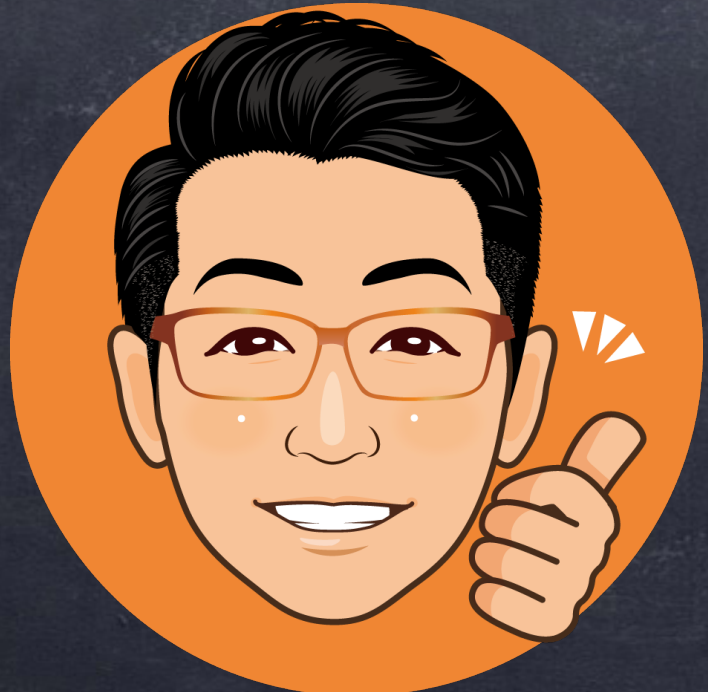$$f(x) = \frac{x^2 + x + a}{x - 1} \quad \text{が} \quad x = -1 \quad \text{で 極値をもつ}$$

∴ $a \geq 2$

$$f(x) = \frac{x^2 + x + 2}{x - 1}$$

$$f'(x) = \frac{(x+1)(x-3)}{(x-1)^2}$$

x	$\cdots$	-1	$\cdots$	1	$\cdots$	3	$\cdots$
$f'(x)$	$+$	0	$-$	/	$-$	0	$+$
$f(x)$	↗		↘		↘		↗

たしかに、$x = -1$ で 極値をもつ

したがって $\underline{a = 2}$