

$$6. f(x) = x + \frac{4}{x}$$

$$= x + 4x^{-1}$$

$$\textcircled{1} f'(x) = 1 - 4x^{-2}$$

$$= 1 - \frac{4}{x^2}$$

$$= \frac{1}{1} - \frac{4}{x^2}$$

$$= \frac{x^2}{x^2} - \frac{4}{x^2}$$

$$f'(x) = \frac{x^2 - 4}{x^2}$$

$$\textcircled{2} x^2 - 4 = 0 \quad x^2 = 0$$

$$x^2 = 4 \quad x = 0$$

$$x = \pm\sqrt{4}$$

$$x = \pm\sqrt{2 \cdot 2}$$

$$x = \pm 2$$

$\textcircled{3}$

	$-\infty$	$x = -2$	$x = 0$	$x = 2$	∞
TEST CASES	$x = -3$	$x = -1$	$x = 1$	$x = 3$	
PLUG INTO $f'(x)$	$\frac{x^2 - 4}{x^2}$				
	$\frac{(-3)^2 - 4}{+}$	$\frac{(-1)^2 - 4}{+}$	$\frac{1^2 - 4}{+}$	$\frac{3^2 - 4}{+}$	
	/	REL MAX	/	REL MIN	/

$\textcircled{4}$

$$x = -2$$

$$y = x + \frac{4}{x}$$

$$y = -2 + \frac{4}{-2}$$

$$y = -2 - 2$$

$$y = -4$$

REL max
 $(-2, -4)$

$$x = 2$$

$$y = x + \frac{4}{x}$$

$$y = 2 + \frac{4}{2}$$

$$y = 2 + 2$$

$$y = 4$$

REL min
 $(2, 4)$