Function y^{I}

$y = x + \frac{1}{x}$

we know that $x \neq 0$

$x < 0 \quad \Rightarrow y < 0$

$x > 0 \quad \Rightarrow y > 0$

There is no meeting points with y = x

We check $x + \frac{1}{x} = a$

$x^2 - ax + 1 = 0$

$\Delta = a^2 - 4 \geq 0$

$a \leq -2$ or $a \geq 2 \quad \Rightarrow \quad y \geq 2$ or $y \leq -2$

$y = x + \frac{1}{x}$

$y^{I} = 1 - \frac{1}{x^2} = 0$, extreme points

$1 - \frac{1}{x^2} = 0 \Rightarrow x^2 = 1$, $x = \pm 1$

(0)

x	x = -1	x = 1
y^{I}	+++++0---------	-----0++++

Max (-1,-2)

Min (1,2)