

() 0

()

$$(1)=0$$

$$0 \quad '() = -+1 = \frac{+}{-} \quad 0 \quad () \quad (0, +\infty)$$

$$() = {}^3 - 1 \quad (0, +\infty)$$

$$0 \quad 1 \quad () \quad (1)=0 \quad () \quad (1)=0 \quad () \quad 0$$

$$=1 \quad (1)= \quad (1)=0 \quad (1)=0 \quad 1 \quad ()$$

$$1 \quad () \quad (1)=0 \quad () \quad (1)=0 \quad () \quad 0$$

()

$$0 \quad '() = -+1 = \frac{+}{-} = 0 \quad = -$$

$$() \quad (0, -) \quad (- , +\infty)$$

$$0 \quad 1 \quad () \quad (1)=0 \quad () \quad 0$$

$$=1 \quad (1)= \quad (1)=0 \quad (1)=0 \quad 1 \quad ()$$

$$1 \quad () \quad (1)=0 \quad () \quad (1, +\infty)$$

$$- \quad 1 \quad -1 \quad 0 \quad () \quad (1, +\infty) \quad () \quad (1)=0 \quad ()$$

$$() \quad () \quad (0, +\infty) \quad 1$$

$$-1 \quad () \quad (1, +\infty)$$

$$-1 \quad () \quad 1 \quad -1 \quad () \quad 2$$

$$() \quad () \quad 0$$

$$() \quad () \quad (1, +\infty)$$

$$() = {}^3 + \frac{1}{4}, \quad () = -\ln$$

$$= ()$$

$$\min\{ , \}$$

$$() = \min\{ (), () \} (> 0)$$

()

$$= -\frac{3}{4}$$

$$\in (1, +\infty) \quad () = -\ln < 0 \quad () = \min\{ (), () \} \quad () < 0$$

$$() \quad (1, +\infty)$$

$$\begin{aligned}
&=1 & -\frac{5}{4} & (1) = +\frac{5}{4} > 0 & (1) = \min\{ (1), (1) \} = (1) = 0 \\
=1 & () & < -\frac{5}{4} & (1) = +\frac{5}{4} < 0 & (1) = \min\{ (1), (1) \} = (1) < 0 \\
=1 & () & & & & \\
&\in (0,1) & () = -\ln > 0 & & () \in (0,1) \\
&-3 & 0 & '() = 3^{-2} +
\end{aligned}$$

$$-4 - () = (6^2 - 6)(-) \quad 4^3 - (3 + 6)^2 + 6 - 5 = 0$$

$$()^3 ()$$

$$\in \left(0, \frac{1}{e}\right) \quad f'(x) < 0 \quad \in \left(\frac{1}{e}, +\infty\right) \quad f'(x) > 0$$

$$f(x) \quad \left(0, \frac{1}{e}\right) \quad \left(\frac{1}{e}, +\infty\right)$$

$$f(x) = \left(\frac{1}{x}\right) = 2 + \ln$$

$$= \frac{1}{e^2} \quad \left(\frac{1}{e}\right) = 0 \quad (x)$$

$$\frac{1}{e^2} \quad \left(\frac{1}{e}\right) < 0 \quad (x) \quad (0, +\infty)$$

$$0 \quad \frac{1}{e^2} \quad \left(\frac{1}{e}\right) < 0 \quad \left(\frac{1}{e}\right) \cdot (1) = (2 + \ln)(e + 1) < 0$$

$$(x) \quad \left(1, \frac{1}{e}\right) \quad 1$$

$$\left(\frac{1}{e}\right) \cdot \left(e^{\frac{1}{e}}\right) < 0 \quad (x) \quad \left(\frac{1}{e}, +\infty\right) \quad 2$$

$$e^{\frac{1}{e}} \cdot \frac{1}{e} \cdot \frac{1}{e^2} \quad g\left(e^{\frac{1}{e}}\right) < 0$$

$$(x) = e^{-2} \quad (x=2) \quad f'(x) = e^{-2} \quad f''(x) = e^{-2} - 2e^{-2} < 0$$

$$f'(x) \quad f'(2) = e^2 - 4 < 0 \quad (x) \quad (2, +\infty)$$

$$(x) \quad (2) = e^2 - 4 < 0 \quad e^{-2} < 0 \quad e^{-2} \quad (x=2)$$

$$= e^{\frac{1}{e}} \quad 0 \quad e^{-2} \quad e^2 - 2$$

$$g\left(e^{\frac{1}{e}}\right) = \cdot e^{\frac{1}{e}} + 1 - \ln e^{\frac{1}{e}} = \cdot e^{\frac{1}{e}} + 1 - \frac{1}{e}$$

$$\frac{1}{e} \cdot e^2 - 2 \quad e^{\frac{1}{e}} \cdot \frac{1}{2} \quad g\left(e^{\frac{1}{e}}\right) \cdot \frac{1}{2} + 1 - \frac{1}{e} = 1 < 0$$

$$(x_1) = (x_2) < 0 \quad (1) = +1 < 0 \quad (x_1) < 0 \quad (x_2) < 0$$

$$(1) = (1) = 0 \quad (x_1) = (x_1) = 0 \quad (x_2) = (x_2) = 0$$

$$(x)$$

$$\left(0, \frac{1}{e^2}\right)$$

