

2.63
k3

(1) $f(0) = e^{-1} - 1$ $(0, e^{-1} - 1)$

$0 = e^{\sin x - \cos x} - 1$

$1 = e^{\sin x - \cos x} \rightarrow e^0 = e^{\sin x - \cos x}$

$\sin x - \cos x = 0 \rightarrow \sin x = \cos x \quad ! \cos x \neq 0$

$\tan x = 1 \rightarrow x = \frac{\pi}{4} + \pi k$

$(\frac{\pi}{4}, 0)$ $(\frac{5\pi}{4}, 0)$

(2) $\frac{d}{dx} e^{\sin x - \cos x} = e^{\sin x - \cos x} (\cos x + \sin x)$

(3) $f' = e^{\sin x - \cos x} (\cos x + \sin x)$

$0 = \cos x + \sin x \rightarrow \sin x = -\cos x \quad ! \cos x \neq 0$

$\tan x = -1$

$x = -\frac{\pi}{4} + \pi k$

$-\frac{2\pi}{4}$	$-\frac{3\pi}{4}$	$-\frac{\pi}{4}$	0	$\frac{\pi}{4}$	$\frac{3\pi}{4}$	$\frac{5\pi}{4}$	2π
+	0	-	0	+	0	-	0
→	max	↓	min	→	max	↓	min

$\max(\frac{3\pi}{4}, e^{\sqrt{2}} - 1)$

$\min(\frac{5\pi}{4}, e^{-\sqrt{2}} - 1)$

$\frac{3\pi}{4} < x < \frac{5\pi}{4}$: $\cos x > 0$

$0 < x < \frac{3\pi}{4}$: $\sin x > 0$

$\frac{5\pi}{4} < x < 2\pi$

