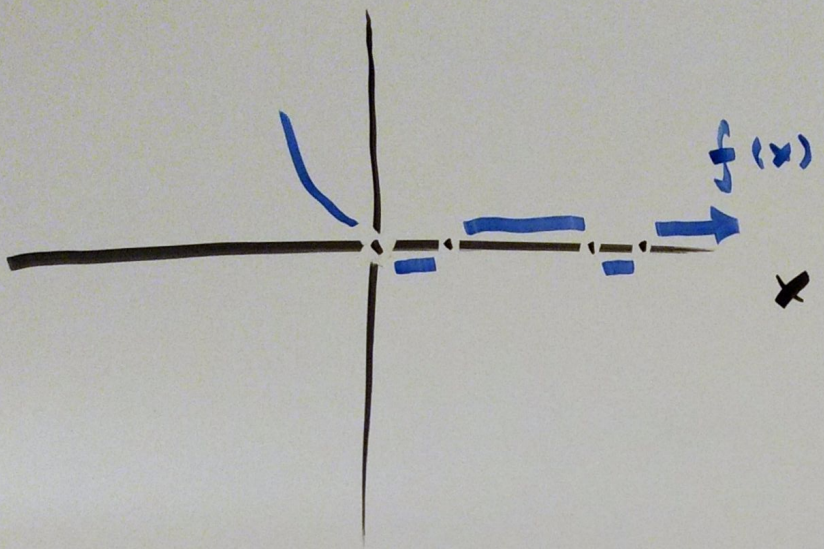
3/6

$$f(x) = e^{-x} + \sin x - 1$$



POTENTIAL CANCELLATION NEAR ROOTS,

& FOR LARGE POSITIVE x

$x_1 = 0$

$x_2 \approx 2.08$

$x_3 \approx 7.83$

$x_4 \approx 7.88$

ROOTS FROM WOLFRAM ALPHA

EXPAND e^{-x} & $\sin x$ IN TRUNCATED TAYLOR SERIES

$$f(x) \approx \left(1 - x + \frac{x^2}{2!}\right) + \left(x - \frac{x^3}{3!} + \frac{x^5}{5!}\right) - 1$$

$$g(x) = \frac{x^2}{2!} - \frac{x^3}{3!} + \frac{x^5}{5!}$$