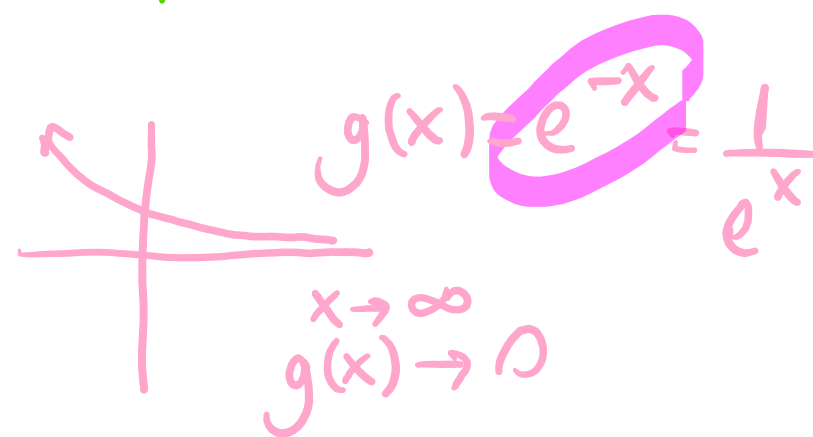
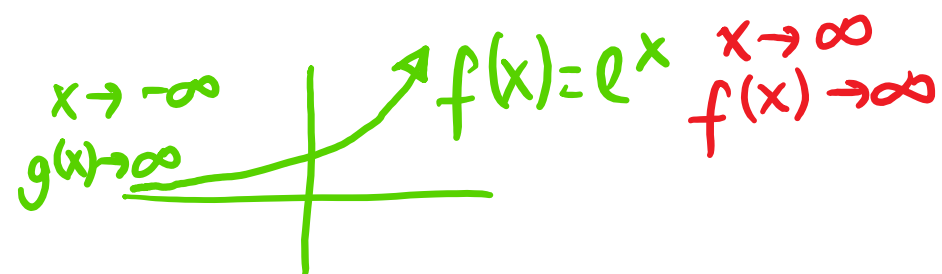


Try it yourself by Monday

Evaluate the limits as $x \rightarrow \infty$, $x \rightarrow -\infty$ for $f(x) = \frac{3e^x - 4}{5e^x + 2}$
 Give the equation of the horizontal asymptote.

$$\lim_{x \rightarrow \infty} \left(\frac{3e^x - 4}{5e^x + 2} \right) \stackrel{\text{DSP}}{=} \frac{\infty - 4}{\infty + 2} \neq 1$$

" $\frac{\infty}{\infty}$ " indeterminate form



$$\lim_{x \rightarrow \infty} \frac{e^x \left(3 - \frac{4}{e^x} \right)}{e^x \left(5 + \frac{2}{e^x} \right)} = \frac{\lim_{x \rightarrow \infty} (3)}{\lim_{x \rightarrow \infty} (5)} = \frac{3}{5}$$

$y = \frac{3}{5}$

$$\lim_{x \rightarrow -\infty} \left(\frac{3 - \frac{4}{e^x}}{5 + \frac{2}{e^x}} \right) = \frac{\infty}{\infty} \text{ indet. form}$$

Use DSP

$$\lim_{x \rightarrow -\infty} \left(\frac{3e^x - 4}{5e^x + 2} \right) \stackrel{\text{DSP}}{=} \frac{-4}{2} = -2$$

$y = -2$

H.A: $y = -2, \frac{3}{5}$