1. Sketch the graphs of the two functions below. Your graphs should take into account where the function is increase and decreasing (i.e., the derivative is positive or negative), and include any horizontal or vertical asymptotes with labels.

   You may double check your work by using a graphing calculator, such as `desmos.com/calculator`, but you must show work supporting your final graphs.

   You will need to compute limits to find horizontal asymptotes and to evaluate the behavior of the function on either side of vertical asymptotes. Make note which limits have indeterminate form, and use L'Hospital's rule when it is appropriate.

   (a) $f(x) = x^4\, e^{-x}$

   (b) $g(x) = x\, e^{1/x}$