1. Let $f(x) = \dfrac{x+1}{x^2(x-3)}$.

   (a) Locate all points where f is discontinuous and any asymptotes.

   (b) Sketch a graph of $f(x)$. Where is $f(x)$ positive? Negative? Zero? Does the graph $f(x)$ ever cross one of its asymptotes?

   (c) Sketch a graph of $g(x) = e^{f(x)}$. Locate any points of discontinuity and any asymptotes. How do these compare to the discontinuities and asymptotes of f?