Physics 7311 Professor Scalise
Homework Assignment #10

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30. Show that $z(f) = \frac{a}{2\pi}(1+f+e^f)$ is analytic by satisfying the Cauchy-Riemann equations.

31. (a) Find equations for the curves describing electric field lines for the boundary conditions
$V(x,0) = V_o$ for $x \geq a$ and $V(x,0) = -V_o$ for $x \leq -a$.
The equipotentials were found in lecture to be hyperbolas.

    (b) Plot the boundary, the equipotential curves, and the electric field lines using a graphing package like Mathematica (not by hand).