Homework for the week of Nov 3.

1. Find conformal maps of upper half plane $\{Im\ z > 0\}$ onto the strip $0 < Re\ z < 1$ and the half strip $0 < Re\ z < 1, Im\ z > 0$.

2. If u is subharmonic in G and $f(z)$ is conformal map of H onto G then show that $u(f(z))$ is subharmonic on H.

3. Show that if $f(z)$ is analytic in a domain G, then $|f(z)|^\alpha$ for $\alpha > 0$ and $\log(1 + |z|^2)$ are subharmonic functions.