

Turn in starred problems Tuesday 2/20/2007.

Section 22.3: 10 (a), (e), *(g), 11 (a), *(c), 14(a), *(d), *(e)

Supplementary exercise 5.1: In each case below, find a conformal mapping $w = f(z)$ carrying the given region D onto the upper half plane $v > 0$ (here $w = u + iv$ and in describing D we always write $z = x + iy$). Give a brief explanation of your answer, but not a full proof.

(a) D is the right half plane $x > 0$.

(b) D is the second quadrant $x < 0, y > 0$. Hint: think about z^2 .

*(c) D is the intersection of the right half plane with the unit disk: $x > 0, x^2 + y^2 < 1$. Hint: start with a bilinear transformation, then use the idea of (b).

*(d) D is the strip $0 < x < 1$.

(e) D is the half strip $0 < x < 1, y > 0$. Hint: modify a homework problem.