(A version of the Schwartz reflection principle.) Let the function *f*  be continuous in the region { *z* : | *z* | < 1, Im *z* ≥ 0}, real valued on the segement ( – 1, 1) of the real axis, and holomorphic in the open set { *z* : | *z* | < 1, Im *z* > 0}. Use the result:

If *f* is a continuous complex-valued function in the open subset *G* of ℂ, and if $∫\_{R}f\left(z\right)dz=0 $for every rectangle *R*, with edges parallel to the coordinate axis, contained with its interior in G, then f is holomorphic

to prove *f*  can be extended holomorphically to the open unit disk.