

Exercise 44

If $f(r) = A(a^2 + r^2)^{-\frac{1}{2}}$, where A is a constant, show that the solution of the biharmonic equation described in Example 1.10.7 is

$$u(r, z) = A \frac{\{r^2 + (z + a)(2z + a)\}}{[r^2 + (z + a)^2]^{3/2}}.$$