Application: Two bodies in contact (Hertzian contact)
(3D Axisymmetric Stress Problem)

Summary of solution procedures:

a. Begin by specializing the stress function equation in cylindrical coordinates $(r, \theta, z) \rightarrow (R, \psi)$ coordinates by noting $(u_r, u_\theta, u_z) \rightarrow (u_r, u_z)$ as u_θ vanishes.

b. Obtain the solutions of the resulting Legendre's equation.

c. Apply the solutions to the problem of a concentrated force at a point in an infinite solid

d. Obtain the solution of a force acting on the boundary of a semi-infinite body

e. Then for the load distributed over a part of the boundary of a semi-infinite solid

f. Finally, for the pressure between two spherical bodies in contact.