Natural gas flow calculation #3 – Pressure drop

Task: Calculate the pressure drop that creates natural gas at a flow rate of 500 MMSCFD through a pipeline with the nominal diameter of 36“, and the length of 4 miles, with an internal roughness of the pipe wall of 0.0005 in. Gas temperature 40 F and the pressure at the pipeline start is 700 psi.

Solution: Pressure drop is: 3.89 psi