NAME; TOBY CHRISTIAN

MECHANICAL ENGINEERING

17/ENG01/027

 ASSIGNMENT 3

 • Given µ= 0.9, , , ,

 • From continuity equation

q = A.u

where

Because Re < 2000, the flow is laminar

 •

 • Given , G = 0.85, ,

, D = 65mm = 0.065m , L = 95m

 •

 Rate of flow, Q = A.u

 Where

 • Centre line velocity =

But,

 • Total frictional drag, fD

Where

 • Power required to maintain flow

 • Velocity gradient at the pipe wall

 • Velocity and shear stress 60mm from wall

The shear stress can be found as;