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;