**AWALA VICTOR**

**MECHANICAL ENGINEERING**

**MEE322**

**17/ENG/06/016**

**ASSIGNMENT 3**

1. Given µ= 0.9, , , ,
   1. From continuity equation

q = A.u

where

Because Re< 2000, the flow is laminar

1. Given , G = 0.85, ,

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

Rate of flow, Q = A.u

Where

* 1. Centre line velocity =

But,

* 1. Total frictional drag, fD

Where

* 1. Power required to maintain flow
  2. Velocity gradient at the pipe wall
  3. Velocity and shear stress 60mm from wall

The shear stress can be found as;