

Relationship between friction factor, viscous stress and head loss

Given a water pipe flow problem as follows:



- 1) Perform a mechanical energy balance for the above system.
- 2) Perform a momentum balance for the above system.
- 3) What can you conclude from the above analyses?
- 4) If the pipe is tilted at an angle of 30 deg with the horizontal, what will be the difference in your analysis?