Data:

- Depth: 5000 ft
- Hole size: 8”
- Drill Pipe: 4 ½” OD 3.824” ID
- Collars: 6”OD 2.5”ID 750 Ft
- Mud θ_{300} 30° θ_{600} 50° 9.8 ppg

If lifting .2” cuttings what is the minimum pump rate?
Calculate the α for the system at this depth. Pick another flow rate to do this.
Show the P_f for all areas of the system.