Homework 1

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DUE November 1, 2017 at 11:59 PM

Submission Requirements: Upload this compiled PDF template as well as your edited .tex file onto your Homework 1 submission branch on GitHub.

1 Problem 1

1.1 Problem 1 Code

```
print("Please enter an Altutude in meters")
Altitude = int(input())
print("")

TropTemp = 15.04 - (0.00649 * Altitude)
TropPress = 101.29*(((TropTemp+273.1)/288.08)**5.256)
TropDensity = ((TropPress)/2.869*(TropTemp+273.1))

LowerTropTemp = -56.46
LowerTropPress = (22.65*2.71828**(1.73-0.000157*Altitude))
LowerTropDensity = ((LowerTropPress)/2.869*(LowerTropTemp+273.1))

UpperStratTemp = -131.21 + (0.00299*Altitude)
UpperStratPress = 2.488*((UpperStratTemp+273.1)/216.6)**-11.388
UpperStratDensity = ((UpperStratPress)/2.869*(UpperStratTemp+273.1))

if Altitude < 11000:
  print ("You are in Troposphere.")
  print ("")
  print ("|Temperature:",TropTemp,"Degrees Celsius|   ", "|Pressure:",TropPress,"Kpa| "

elif Altitude >= 11000 and Altitude <=25000:
  print ("You are in Lower Troposphere.")
  print ("")
  print ("|Temperature:",LowerTropTemp,"Degrees Celsius|","Kpa|  " ,"|Density:",LowerTro

if Altitude > 25000:
  print ("Hooray, You are in the upper Stratosphere !")
  print ("")
  print ("|Temperature:",UpperStratTemp,"Degrees Celsius|   " ,"|Pressure:",UpperStratPr
```

1.2 Problem 1 Output

```
Python 3.6.1 (default, Dec 2015, 13:05:11)
[GCC 4.8.2] on linux

Please enter an Altutude in meters
 13000

You are in Lower Troposphere.
```

|Temperature: -56.46 Degrees Celsius| Kpa| |Density: 1253.1723732231417 kg/m^3|

2 Problem 2

2.1 Problem 2 Code

print (”Please Enter the Velocity in meters”) Velocity = int(input()) print (””)
print (”Please enter the Length in terms of diameter”) Length = int(input())
print (””)
Density = 1.225
Viscosity = 1.81
Reynolds = Velocity*Length*Density / Viscosity print(”your final value for Reynolds is”,Reynolds)

2.2 Problem 2 Output

Python 3.6.1 (default, Dec 2015, 13:05:11) [GCC 4.8.2] on linux
Please Enter the Velocity in meters 25
Please enter the Length in terms of diameter 25
your final value for Reynolds is 422.99723756906076