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MEEN 2450 Lab 4: Bisection Method function

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```
# compute the number of iterations to achieve eSuba<1*10**-6
tol = 1*10**-6
n = math.log((b-a)/tol)/math.log(2)
print('n = ',n)
```

```
n =  15.45763738099176
```

The number of iterations needed to give an estimate with a tolerance of 1*10^-6 would be 15.45. This is less than the number of iterations my code runs, 16, however it is similar since step since I am incrementing by is 1 iteration. Since the number of iterations is an integer it makes sense that the n must be rounded up to the next higher integer.

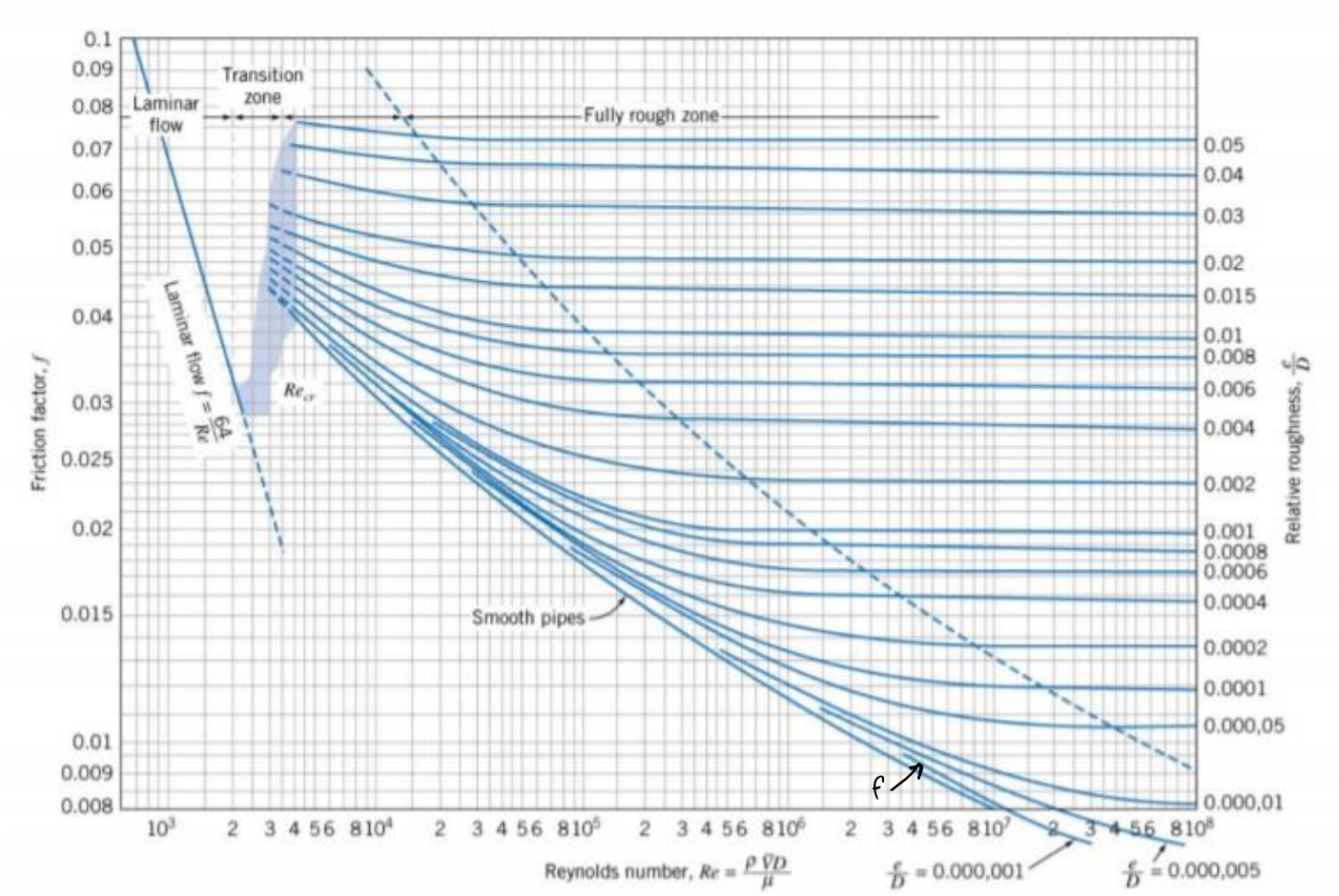

Figure 2: The Moody Diagram - Solutions to the Colebrook Equation

From my code I found that f=0.05999931335449 which makes logical sense given the above graph and the initial conditions that I used to solve for the value of f

```
e = 0.0002 #roughness of the pipe m
D = 0.25 #diameter m
V = 10 #average velocity of flow m/s
ro = 1000 #density kg/m^3
mu = 6*10**(-4) #viscosity Pa/s
L = 110 #length of pipe m
g = 9.81 # force due to gravity
Re = ro*V*D/mu #Reynolds number kg*Pa/m*s^2
Re =  4166666.6666666665
```