```
#To Calculate the length of transition curve
V= int(input("Enter the value of design speed: "))
R= int(input("Enter the value of Radius of curvature: "))
N= int(input("Enter the value of slope: "))
W= float(input("Enter the value of width of road including extra widening: "))
emax=float(input("'enter the value for plain terain:")) ecal= (V*V/(225*R))
print("The value of Super elevation:",ecal)
if ecal<emax:     print(ecal) else:
    print(emax)
    Ls=(emax*N*W/2)
    print("The length of transition curve:", Ls)
```

```
Enter the value of design speed: 65
Enter the value of Radius of curvature: 220
Enter the value of slope: 150
Enter the value of width of road including extra widening: 7.5
'enter the value for plain terain:0.07
The value of Super elevation: 0.08535353535353535
0.07
The length of transition curve: 39.37500000000001
```

```
R = int(input(" Constant R: "))
C = int(input(" Constant C: "))
import numpy as geek
A = int(input ("Total Data Values for EWL Constant: "))
B = int(input ("Total Data Values for AADT: "))
EWL_Constant = [] AADT = [] for
i in range (1, A+1):
print("Enter EWL Constant:")
      A = float (input())
    EWL_Constant.append(A)
for j in range (1, B+1):
print ("Enter AADT: ")
      B = float (input ())     AADT.append(B)
product = geek.dot (EWL_Constant, AADT)
# print(" Dot Product :\n", product)
Total_EWL = product print(" Total EWL :",
Total_EWL) print("EWL after 60 years :",
Total_EWL*1.6)
TI = 1.35*(((1.6* Total_EWL)+((product)/2))**0.11)
print("Traffic Index : ", TI) Thickness = 0.166*TI*
(90-R)/(C**0.2) print("Pavement Thickness: ",
Thickness, "cm")
```

```
Constant R: 48
 Constant C: 16
Total Data Values for EWL Constant: 4
Total Data Values for AADT: 4
Enter EWL Constant:
330 Enter EWL
Constant: 1070
Enter EWL Constant:
2460 Enter EWL
Constant:
```

```
4620 Enter
AADT:
3750 Enter
AADT:
470 Enter
AADT:
320 Enter
AADT:
120
 Total EWL : 3082000.0
EWL after 60 years : 4931200.0
Traffic Index :  7.577910657490486
Pavement Thickness:  30.34470100391634 cm
```

```
P =float(input(" Load in kg: ")) p
=float(input (" Tyre pressure kg/cm^2: "))
M = int(input ("Total Number of layers in a given Pavement : "))
pi = 3.14159 CBR = [] for i in range (1, M+1):
        print("California Bearing Ratio of Material in %")
        CBR_value = float (input())
        CBR.append(CBR_value)
        T = ((1.75*P)/(CBR_value)-(P/(p*pi)))**0.5
print("Thickness Above this layer: ", T, "cm") print("Given that
bitumen layer of 4 cm")
```

```
Load in kg: 4085
 Tyre pressure kg/cm^2: 7
Total Number of layers in a given Pavement : 3
California Bearing Ratio of Material in %
4.38 Thickness Above this layer:
38.031276487723645 cm
California Bearing Ratio of Material in %
6
Thickness Above this layer:  31.712799015896838 cm
California Bearing Ratio of Material in %
12
Thickness Above this layer:  20.247776538573337 cm
Given that bitumen layer of 4 cm
```