Q 1.

```
# Stress When depth is constant
Q = float (input ("Enter the value of Load in kN: "))
N= int (input ("Number of data values of radial distance: "))
pi = 3.14159265359
Z = float (input ("Depth: "))
r = []
for i in range (1, N+1):
  print ("Enter radial distance in m".format (i))
  Value_r = float(input () )
  r.append (Value_r)
  Stress = ((3*Q)/(2*pi*Z*Z))*(((1 / (1+((Value_r/Z)**2))))**2.5)
  print("Stress:" , Stress, "kN/m^2")
```

```
Enter the value of Load in kN: 2500
Number of data values of radial distance: 5
Depth: 6
Enter radial distance in m
1
Stress: 30.962130445358056 kN/m^2
Enter radial distance in m
2
Stress: 25.479163627894877 kN/m^2
Enter radial distance in m
3
Stress: 18.98033449112347 kN/m^2
Enter radial distance in m
4
Stress: 13.22290223969301 kN/m^2
Enter radial distance in m
5
Stress: 8.871775810212231 kN/m^2
```

Q 2.

```
# Stress when Radius is Constant
Q = float (input("Enter the value of Load in kN: "))
M= int (input ("Number of data values of depth: "))
pi = 3.14159265359
r = float (input("Radial Distance: "))
Z = []
for j in range (1, M+1):
  print ("Enter depth in Z".format(j))
  Value_Z = float(input())
  Z.append (Value_Z)
  Stress = ((3*Q)/(2*pi*Value_Z*Value_Z))*(((1 / (1+((r/Value_Z)**2))))**2.5)
  print("Stress:" , Stress, "kN/m^2")
```

```
Enter the value of Load in kN: 2500
Number of data values of depth: 6
Radial Distance: 5
Enter depth in Z
1
Stress: 0.34629643854273023 kN/m^2
Enter depth in Z
2
Stress: 2.1085135063018074 kN/m^2
Enter depth in Z
3
Stress: 4.781320614736756 kN/m^2
Enter depth in Z
4
Stress: 7.0974399578803125 kN/m^2
Enter depth in Z
5
Stress: 8.440465463972316 kN/m^2
Enter depth in Z
6
Stress: 8.871775810212231 kN/m^2
```

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Q 3.

```
#Calculating the stress by Boussineq's Theory
Q=int(input("Enter the value of given load :"))
z=int(input("Enter the distance of vertical stress :"))
r = int(input("Enter the distance of horizntal stress:"))
stress = (3*Q*((1/(1+(r/z)**2))**2.5))/(2*3.14*(z**2))
print("The value of stress is",stress)
```

```
Enter the value of given load :2500
Enter the distance of vertical stress :6
Enter the distance of horizntal stress:5
The value of stress is 8.876275703713446
```

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