#ASSIGNMENT NO. 11 ABHISHEK KHEDEKAR 401A050 12/09/2023

In [1]:
```
Q=float(input("Enter Concentreated load in kN="))
Sigmaz= float(input("Enter value of vertical normal stress in kN/sq.m="))
```

```
Enter Concentreated load in kN=500
Enter value of vertical normal stress in kN/sq.m=20
```

In [19]:
```
z=0.1
zmax=(0.4775*Q/Sigmaz)**0.5
print("Maximum depth to which Sigmaz = {} kPa exists = zmax = {} m".format(Sigmaz
while(z<=zmax):
    z=z+0.1
    r=z*(((((0.4775*Q)/(Sigmaz*z*z))**0.4)-1)**0.5)
    print("z = {} m ;    r = {} m ".format(z,r))

```

```
Maximum depth to which Sigmaz = 20.0 kPa exists = zmax = 3.4550687402713134 m
z = 0.2 m ;    r = 0.5923192631423351 m
z = 0.30000000000000004 m ;    r = 0.7387732074899913 m
z = 0.4 m ;    r = 0.8590223375839946 m
z = 0.5 m ;    r = 0.9610541185810748 m
z = 0.6 m ;    r = 1.0491197857665815 m
z = 0.7 m ;    r = 1.1258108616943505 m
z = 0.7999999999999999 m ;    r = 1.1928440892833108 m
z = 0.8999999999999999 m ;    r = 1.251420920718216 m
z = 0.9999999999999999 m ;    r = 1.302414011385599 m
z = 1.0999999999999999 m ;    r = 1.346472823225293 m
z = 1.2 m ;    r = 1.384087369222187 m
z = 1.3 m ;    r = 1.4156285280925875 m
z = 1.4000000000000001 m ;    r = 1.441374368177471 m
z = 1.5000000000000002 m ;    r = 1.4615276228773957 m
z = 1.6000000000000003 m ;    r = 1.4762272460378822 m
z = 1.7000000000000004 m ;    r = 1.4855557549197522 m
z = 1.8000000000000005 m ;    r = 1.489543345928177 m
z = 1.9000000000000006 m ;    r = 1.4881693007559424 m
z = 2.0000000000000004 m ;    r = 1.4813608562973977 m
z = 2.1000000000000005 m ;    r = 1.4689894075203838 m
z = 2.2000000000000006 m ;    r = 1.4508635805120838 m
z = 2.3000000000000007 m ;    r = 1.4267182755414596 m
z = 2.400000000000001 m ;    r = 1.39619812000605 m
z = 2.500000000000001 m ;    r = 1.3588326790462404 m
z = 2.600000000000001 m ;    r = 1.3139988333068358 m
z = 2.700000000000001 m ;    r = 1.2608620641945887 m
z = 2.800000000000001 m ;    r = 1.198280943465728 m
z = 2.9000000000000012 m ;    r = 1.1246427357585351 m
z = 3.0000000000000013 m ;    r = 1.0375580410964063 m
z = 3.1000000000000014 m ;    r = 0.9332306930200007 m
z = 3.2000000000000015 m ;    r = 0.8049411123983857 m
z = 3.3000000000000016 m ;    r = 0.6383517997566794 m
z = 3.4000000000000017 m ;    r = 0.38671168349103574 m
z = 3.5000000000000018 m ;    r = (2.1732725423794718e-17+0.3549223406932658j) m
```