M.SyedulMursaleen Lab 3

In [2]:
```
# programming Exercise
#Question-1
angular_speed=10
Radius=float(input("Enter Radius: "))
velocity= Radius * angular_speed
print("linear velocity is",velocity,"m/s")
```

```
Enter Radius: 0.5
linear velocity is 5.0 m/s
```

In [3]:
```
#Question-2
from math import pi
r=float(input("Enter Radius: "))
rpm=int(input("Enter Revolution per minute: "))
x=rpm/60
w=x*2*pi
v=r*w
print("linear velocity is :",v,"m/s")
```

```
Enter Radius: 5
Enter Revolution per minute: 5000
linear velocity is : 2617.993877991494 m/s
```

In [4]:
```
#Question-3
velocity = float(input("Enter Velocity:"))
Radius = float(input("Enter Radius "))
R_in_meter = Radius/100
print(R_in_meter,"m")
angular_velocity = velocity/R_in_meter
print("angular velocity is ",angular_velocity,"rad/s")
```

```
Enter Velocity:10
Enter Radius 30
0.3 m
angular velocity is  33.333333333333336 rad/s
```

In [5]:
```
#Question-4
v = float(input("Enter Velocity: "))
d = float(input("Enter Diameter: "))
r = d/2
r_in_meter=r/100
w = v/r_in_meter
print("Angular speed is: ",w,"rad/s")
```

```
Enter Velocity: 10
Enter Diameter: 50
Angular speed is:  40.0 rad/s
```

In [6]:
```
#Question-5
from math import pi
r=float(input("Enter Radius in cm: "))
angular_speed=float(input("Enter angular speed in rpm: "))
t=float(input("Enter Time in sec: "))
r_in_meter=r/100
x = angular_speed/60
w = x*2*pi
v = r_in_meter*w
distance=v*t
print("Distance is: ",distance,"m")
```

```
Enter Radius in cm: 20
Enter angular speed in rpm: 120
Enter Time in sec: 10
Distance is:  25.132741228718345 m
```

In [7]:
```
#Question-6
u = float(input("Enter Velocity miles per hour: "))
a = float(input("Enter Acceleration in miles per hour^2: "))
t=float(input("Enter Time in Hours: "))
v=u+(a*t)
d=v*t
d_in_meter=d*1609.344
print("distance is",d_in_meter," meters")
```

```
Enter Velocity miles per hour: 50
Enter Acceleration in miles per hour^2: 10
Enter Time in Hours: 2
distance is 225308.16  meters
```

In [3]:
```
#Question-7
from math import sqrt
u=0
a=9.8
h=float(input("Enter height in feet: "))
h_in_meter=h/3.281
v=sqrt((2*a*h_in_meter)+u**2)
print("The velocity with which stone hit the ground is: ",v,"m/s")
```

```
Enter height in feet: 100
The velocity with which stone hit the ground is:  24.441334822636467 m/s
```