

Gravitational force is the attractive force that exists between two masses.

It can be calculated by using the following formula:

The diagram shows the formula for gravitational force: $F = G \frac{m_1 m_2}{r^2}$. Handwritten labels with arrows point to each part: 'force' points to F , 'Gravitational constant' points to G , 'mass' points to m_1 and m_2 , and 'distance' points to r^2 . Below the formula, two spheres representing masses m_1 and m_2 are shown separated by a horizontal line labeled r , representing the distance between them.

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In [18]: ▶ 1 # the gravitational constant
2 G = 6.67 * pow(10,-11) #in the unit: N m2/kg2
3 print("This is a Gravitational force calculator")
4
5 # get the masses and distance from the user
6
7 M1= float(input("Mass for first object in kg :"))
8 M2= float(input("\nMass for second object in kg :"))
9 r= float(input("\nThe distance between two objects in meter :"))
10
11 # calculate the gravitational force
12
13 F= (float(G) * M1 * M2 )/pow(r,2)
14
15 print("The Gravitational force = ", float(F) ,"N")
```

This is a Gravitational force calculator

Mass for first object in kg :6.0e24

Mass for second object in kg :7.34e22

The distance between two objects in meter :3.84e8

The Gravitational force = 1.9920979817708333e+20 N