Gravitational force is the attractive force that exists between two masses.
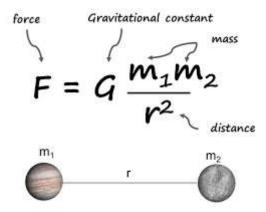
It can be calculated by using the following formula:

$$F = G \frac{m_1 m_2}{r^2}$$

In [18]:

```python
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
```