

## 1. Oldton's Law of Universal Gravity

Oldton's law of universal gravity states that the force,  $F$ , between two bodies of masses  $M_1$  and  $M_2$  is given by:

$$F = k(M_1 * M_2) / d^2$$

in which  $k$  is the gravitational constant and  $d$  is the distance between the bodies. The value of  $k$  is approximately  $0.667 \text{ dyn (cm}^2/\text{kg}^2)$ . Write a program to output the force between two bodies given that the mass of the first and second object is  $59700\text{kg}$  and  $198892\text{kg}$  respectively and they're  $100$  meters apart.

### Pseudocode

Declare a variable force (float)

Declare a variable mass one (integer) and initialize it to  $59700$

Declare a variable mass two (integer) and initialize it to  $198892$

Declare a variable distance (integer) and initialize it to  $100$

Calculate the force between the objects (use equation above) and store the value in force

Display the value of variable force on the screen