1. Marcus suddenly finds himself (in a space suit) 66702 km above the alien planet X. He happens to know that this planet has a mass of 8.0×10.0^{27} kg and a radius of 7863 km.

For this question, write a Python program that:

- Has a function that implements Newton's Law of Universal Gravitation:

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

- Write another function that uses the previous one to calculate the gravitational force on an object of given mass and height above planet X.
- Use the second function to calculate the gravitational force on Marcus (who has a mass of 65 kg) as well as the gravitational acceleration on the surface of planet X.

2. Marcus suddenly finds himself (in a space suit) 53175 km above the alien planet X. He happens to know that this planet has a mass of 4.4×10.0^{28} kg and a radius of 6297 km.

For this question, write a Python program that:

- Has a function that implements Newton's Law of Universal Gravitation:

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

- Write another function that uses the previous one to calculate the gravitational force on an object of given mass and height above planet X.
- Use the second function to calculate the gravitational force on Marcus (who has a mass of 66 kg) as well as the gravitational acceleration on the surface of planet X.

3. Marcus suddenly finds himself (in a space suit) 41287 km above the alien planet X. He happens to know that this planet has a mass of 9.0×10.0^{25} kg and a radius of 6005 km.

For this question, write a Python program that:

- Has a function that implements Newton's Law of Universal Gravitation:

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

- Write another function that uses the previous one to calculate the gravitational force on an object of given mass and height above planet X.
- Use the second function to calculate the gravitational force on Marcus (who has a mass of 77 kg) as well as the gravitational acceleration on the surface of planet X.