

February 3, 2023
MSE 2101 topics

- Newton's law of gravity
 - dependence on mass?
 - dependence on distance?
 - proportionality constant?
- So: what happens to the force of gravity when:
 - one of the masses increases 2 times?
 - the other of the masses increases 3 times?
 - the distance between the masses increases 4 times?
 - the distance between the masses decreases 5 times?

- Kepler's 3rd law finally explained:

The law of gravity: _____

Centrifugal force: _____

Equating them yields: _____

- Example: calculate your weight on Earth. The mass of Earth is 6×10^{24} kg, and the radius is... well, you know that, right?
- Another example: what is the gravitational pull on 1 liter of ocean by the Moon? The mass of the Moon is $1/6^{\text{th}}$ the mass of Earth.