

September 20, 2021  
MSE 2101 topics

- The math behind gravity and Kepler's 3<sup>rd</sup> law

The law of gravity: \_\_\_\_\_

Centrifugal force: \_\_\_\_\_

Equating them yields: \_\_\_\_\_

- Examples:
  - What is the orbital period of Jupiter if it orbits at 5.2au?
  - What is the distance to Pluto if it orbits the Sun in 250 years?
  - What would Earth's orbital period be if the Sun were twice as massive?
- The Hallmarks of science:
  - ditch supernatural!
  - create testable models for which Occam's razor applies!
  - test predictions, revise, abandon if faulty!
- Science vs. pseudoscience
- The Trial of Galileo; can science and religion co-exist?