

$$d = r_m t$$

$$t = 1s$$

$$d = .0014m$$

apple

$$g = 9.8 m/s^2$$

$$t = 1.0s$$

$$d = 4.9m$$

moon

$$1/60^2 = 1/3600$$

$$a = .0027 m/s^2$$

$$t = 1s$$

$$d = .0014m \text{ or } 1.4mm$$

$$F \approx \frac{m_1 m_2}{r^2}$$

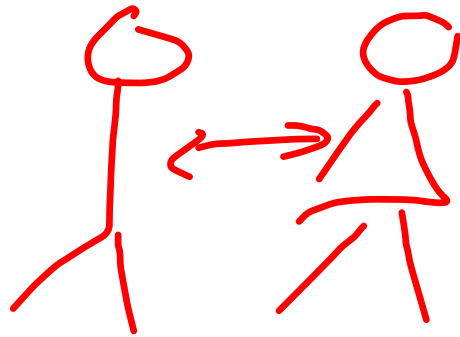
$$f \Rightarrow \frac{G m_1 m_2}{r^2}$$

gravitational constant
"unit strength of gravity"

$$m \sim \text{kg}$$

$$r \sim \text{m}$$

$$G = 6.67 \times 10^{-11} \text{ N m}^2 / \text{kg}^2$$



$$F = \frac{G (75 \text{ kg}) (57 \text{ kg})}{(0.75 \text{ m})^2}$$

$$F = 5.07 \times 10^{-7} \text{ N}$$