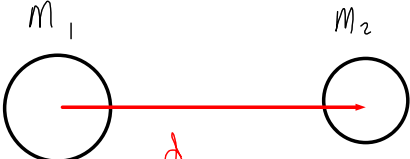


Feb. 18

Mass 1 + 2 Kg



m_1 m_2

d
distance between
the centers of
mass (meters)

We can see that
gravity has something to
do with the masses and the
distance between them.

Proportional - for gravity,
if mass increases,
gravity increases.

Inversely Proportional -
There is an opposite
relationship. As one thing
increases, another decreases.

If the distance increases,
gravity decreases.

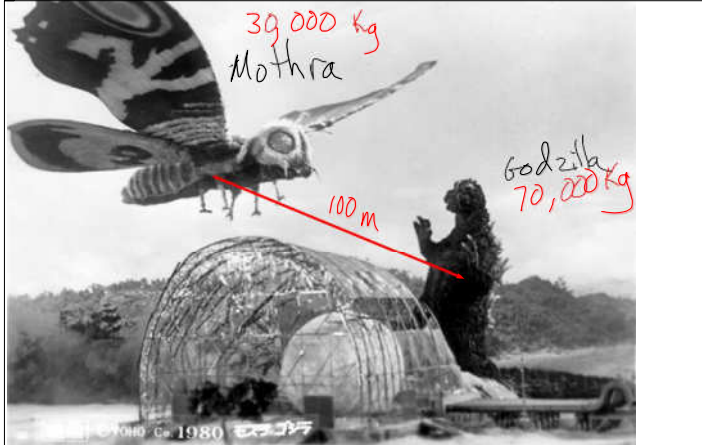
F_g - Force of gravitational attraction (Newtons)
 m mass (kg)
 d distance (meters)

$F_g = \overset{?}{\underset{\uparrow}{G}} \frac{m_1 m_2}{d^2} = \frac{\text{kg}^2}{\text{m}^2}$

Big $G = 6.67 \times 10^{-11} \frac{\text{Nm}^2}{\text{kg}^2} \leftarrow \text{OMG!}$
 .0000000000667

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

Wow!



$F_g = G \frac{m_1 m_2}{d^2}$
 $= 6.67 \times 10^{-11} \times 10^9$
 $6.67 \times \boxed{2 \times 10^4} \times \boxed{10^5} \times (-) \uparrow \uparrow =$
 $6.67 \times 10^{-11} = 6.67 \times 10^{-11}$
 $\times 30000 =$
 $\times 70000 =$
 $\div 100 =$
 $\div 100 =$

.000014007 N

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

↓ Earth

your weight = $6.67 \times 10^{-11} \frac{(5.97 \times 10^{24} \text{ kg})(60 \text{ kg})}{(6.4 \times 10^6)^2}$

$$6.67 \times 10^{-11} =$$

$$\times 5.97 \times 10^{24} =$$

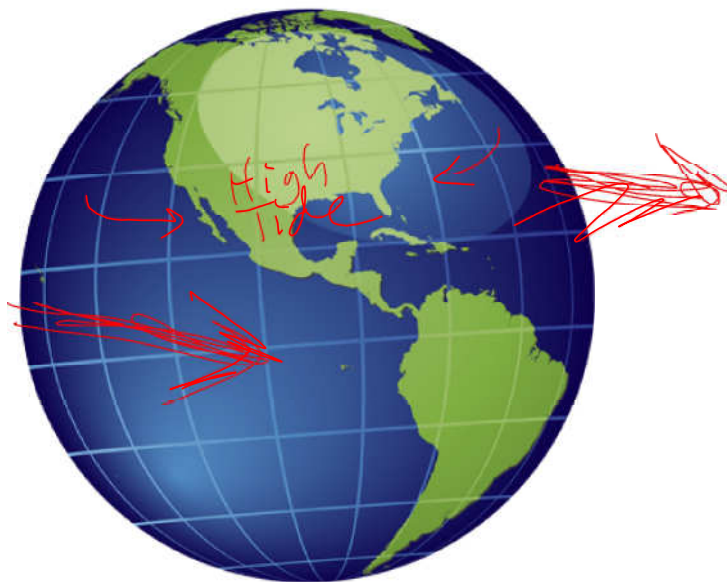
$$\times 60 =$$

$$\div 6.4 \times 10^6 =$$

$$\div 6.4 \times 10^6 = \boxed{583.299 \text{ Newtons}}$$

$$= \boxed{583.3 \text{ N}}$$

Cause of the Tides



at
here
→