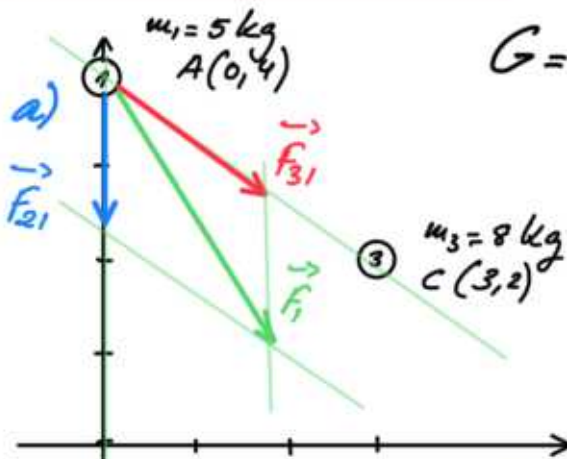


EJERCICIO FQ1B3361:



$$G = 6,67 \cdot 10^{-11} \frac{\text{N} \cdot \text{m}^2}{\text{kg}^2}$$

"achimages.com"

$$\vec{F}_1 = \vec{F}_{21} + \vec{F}_{31}$$

$$b) \vec{F}_{21} = -G \frac{m_2 m_1}{r_{21}^2} \frac{\vec{r}_{21}}{r_{21}} = \dots$$

$$\vec{r}_{21} = 8\vec{j} \Rightarrow |\vec{r}_{21}| = 8 \text{ m}$$

$$\dots \vec{F}_{21} = -6,67 \cdot 10^{-11} \frac{7 \cdot 5}{8^2} \frac{8\vec{j}}{8} =$$

$$\boxed{\vec{F}_{21} = -3,65 \cdot 10^{-11} \vec{j} \text{ (N)}}$$

$$c) \vec{F}_{31} = -G \frac{m_3 m_1}{r_{31}^2} \frac{\vec{r}_{31}}{r_{31}} = \dots$$

$$\vec{r}_{31} = -3\vec{i} + 2\vec{j} \Rightarrow |\vec{r}_{31}| = \sqrt{(-3)^2 + 2^2} = \sqrt{13} \text{ m}$$

$$\dots = \vec{F}_{31} = -6,67 \cdot 10^{-11} \frac{8 \cdot 5}{(\sqrt{13})^2} \frac{-3\vec{i} + 2\vec{j}}{\sqrt{13}} =$$

$$\boxed{= \vec{F}_{31} = 1,71 \cdot 10^{-10} \vec{i} - 1,14 \cdot 10^{-10} \vec{j} \text{ (N)}}$$

$$d) \vec{F}_1 = \vec{F}_{21} + \vec{F}_{31} = \dots = 1,71 \cdot 10^{-10} \vec{i} - 1,51 \cdot 10^{-10} \vec{j} \text{ (N)}$$

Signe...

c) El vector aceleración que experimenta la masa 1:

$$\vec{F} = m \cdot \vec{a} \Rightarrow \vec{a}_1 = \frac{\vec{F}_1}{m_1}$$

$$\vec{a}_1 = \frac{1,71 \cdot 10^{-10} \vec{i} - 1,51 \cdot 10^{-10} \vec{j}}{5}$$

$$\vec{a}_1 = 3,42 \cdot 10^{-11} \vec{i} - 3,02 \cdot 10^{-11} \vec{j} \text{ m/s}^2$$