Answer on Question #49784, Physics, Mechanics | Kinematics | Dynamics

Task: A force acts on 2 kg mass and gives it an acceleration of 3m/s². What acceleration is produced by the same force when acting on a mass of 1kg?

Solution:

$$F_1 = m_1 \cdot a_1;$$

$$F_1 = F_2 \Rightarrow m_1 a_1 = m_2 a_2 \Rightarrow a_2 = \frac{m_1 a_1}{m_2} = \frac{2kg \cdot 3\dfrac{m}{s^2}}{1kg} = 6\frac{m}{s^2}$$

Answer: acceleration is 6m/s²