

Answer on Question 50003, Physics, Mechanics | Kinematics | Dynamics

Question:

A force of 20N is pushing two blocks horizontally along a frictionless floor. What is the force that the B block exerts on A block mass of A are 8 kg and 2 kg respectively.

Solution:

Let us obtain the acceleration of the system of the blocks A and B. By the definition of the Newton's Second Law of motion we have:

$$a = \frac{F}{m_1 + m_2} = \frac{20N}{8kg + 2kg} = 2 \frac{m}{s^2}.$$

As we known the acceleration we can obtain the force that the B block exerts on the A block:

$$F_B = m_B a = 2kg \cdot 2 \frac{m}{s^2} = 4N.$$

Answer:

$$F_B = 4N.$$