Answer on Question # 50004 – Physics – Mechanics | Kinematics | Dynamics

Given:

$m_1 = 6kg \qquad m_2 = 4kg \qquad m_3 = 10kg$

$T_3 = 40N$

Find: T_2

Solution:

We use the Newton's second law of motion

$$a = \frac{T_3}{m_1 + m_2 + m_3} = \frac{T_2}{m_1 + m_2}$$

So

$$T_2 = \frac{m_1 + m_2}{m_1 + m_2 + m_3} T_3 = \frac{10kg}{20kg} \cdot 40N = 20N$$

Answer: $T_2 = 20N$