

Mathematics Questions by Topics

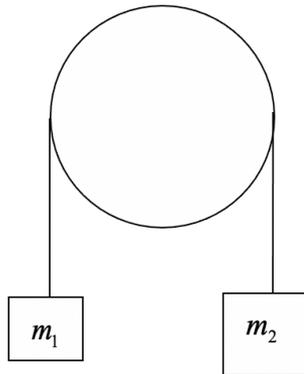
Motion and Force

Question 25

Source: K13SM2Q21

Question 25

A light inextensible string passes over a smooth pulley, with particles of masses m_1 and m_2 kg, attached to each end of the string as shown in the diagram.



Which of the following is **false**?

- A. If $m_2 = 2m_1$ the mass m_2 moves downwards with an acceleration $\frac{g}{2} \text{ ms}^{-2}$.
- B. If $m_1 = m_2 = m$ the tension in the string is equal to mg newtons.
- C. If $m_1 = m_2$ both masses remain at rest.
- D. If $m_2 > m_1$ the mass m_2 moves downwards with an acceleration $\frac{(m_2 - m_1)g}{m_1 + m_2} \text{ ms}^{-2}$.
- E. If $m_1 \neq m_2$ the tension in the string is equal to $\frac{2m_1m_2}{m_1 + m_2}$ kg-wt.