

Mathematics Questions by Topics

Motion and Force

Question 1

Source: K22SM2Q14

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Two masses of mass m and $2m$ kg are hanging vertically and connected by a light string which passes over a smooth pulley. In this situation the mass $2m$ moves downwards with an acceleration of $a \text{ ms}^{-2}$ and the tension in the string is T_1 newtons. When an extra mass of $3m$ is added to the mass m , it now moves down with the same acceleration of $a \text{ ms}^{-2}$ and the tension in the string is T_2 newtons. The ratio $\frac{T_2}{T_1}$ is equal to.

- A. $\frac{1}{3}$
- B. 1
- C. 2
- D. 3
- E. 4

