

I-89

Tired of walking up the stairs, an 80 kg engineering student designs an ingenious device for reaching his third floor dorm room. A block is attached to a rope that passes over a pulley. The student holds the other end of the rope. When the block is released, the student is pulled up to his dorm room, 8 m off the ground, in a time of 1.8 s.

Motion Diagram

Free-Body Diagrams



Object:

Event 1:

$t_1 =$

$r_1 =$

$v_1 =$

$a_{12} =$

Motion Information

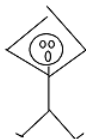
Event 2:

$t_2 =$

$r_2 =$

$v_2 =$

student



block



Mathematical Analysis

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