

Mathematics Questions by Topics

Motion and Force

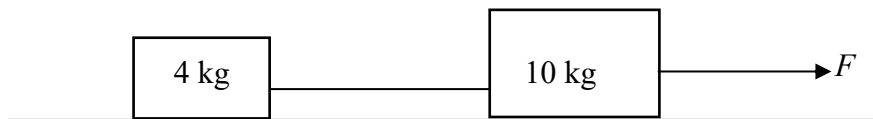
Question 16

Source: K15SM2Q16

Question 16

Two boxes of masses 10 kg and 4 kg are connected by a light horizontal string and are on a horizontal table, as shown in the diagram below. The coefficient of friction between the 10 kg box and the table is 0.5. The contact between the 4 kg block and table is smooth. The 10 kg box is pulled by a force of F , parallel to the table.

Which of the following is **false**?



- A. If $F = 50$ newtons, the boxes move with a constant acceleration equal to $\frac{1}{14} \text{ m/s}^2$
- B. If $F = 49$ newtons, the boxes are on the point of moving.
- C. If $F = 48$ newtons, the boxes move with constant velocity.
- D. If $F = 47$ newtons the boxes remain at rest.
- E. If $F = 46$ newtons