Friction

Date: 22/06/2023
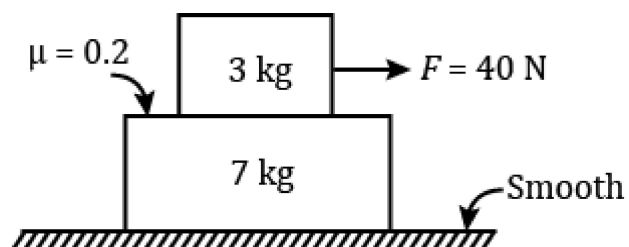
Subject: Other

Topic : Friction

Class: Standard XII

Time: 00:20 hrs

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1. Find the frictional force between the two blocks. Take $g = 10 \text{ m/s}^2$.

$\mu = 0.2$

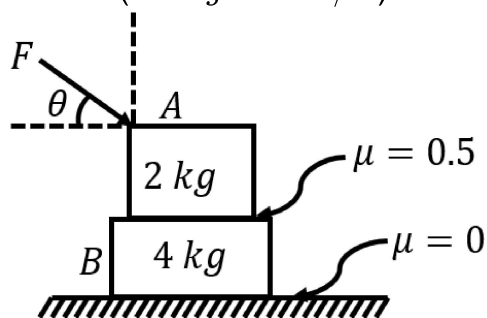3 kg $\rightarrow F = 40 \text{ N}$

7 kg — Smooth

   A. 6 N

   B. 28 N

   C. 30 N

   D. 70 N

2. Find the maximum force F to be applied for the system shown, so that the two blocks move together. Take $g = 10 \text{ m/s}^2$.
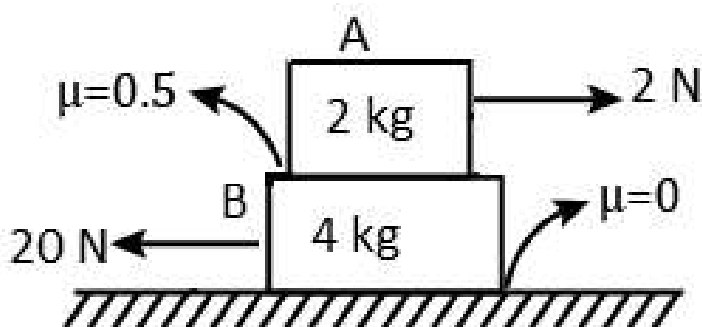

20 kg $\mu = 0.3$

$F \rightarrow$ 30 kg $\mu = 0.2$

   A. 500 N

   B. 250 N

   C. 150 N

   D. 300 N

3. If the system is initially at rest. Find the acceleration of $2\ kg$ and $4\ kg$ masses, where it is given that $2\ kg$ mass does not slide on $4\ kg$ mass for the figure shown. The external force F acting on the mass $2\ kg$ at an angle $\theta = 37°$. (Take $g = 10\ m/s^2$)
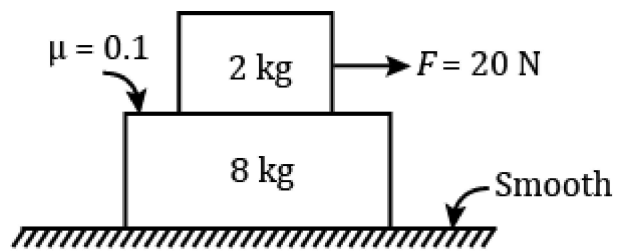

A. $a_A = a_B = \dfrac{4}{3} m/s^2$

B. $a_A = a_B = \dfrac{8}{3} m/s^2$

C. $a_A = a_B = \dfrac{3}{4} m/s^2$

D. $a_A = a_B = \dfrac{10}{3} m/s^2$

4. In the arrangement shown in the figure, the coefficient of friction between the two blocks is $\mu = 0.5$ and the surface is smooth. The force of friction acting between the two blocks is

A. 10 N

B. 12 N

C. 8 N

D. 4 N

5. Find the frictional force between the two blocks. Take $g = 10 \text{ m/s}^2$.

A. 2 N

B. 1.5 N

C. 1 N

D. 3 N