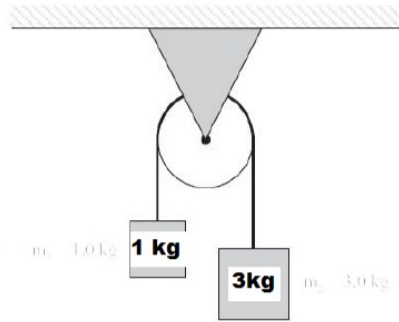


Physics 3204
Unit1- Section 2: Newton's Laws
 Worksheet 2: Strings and Pulley's



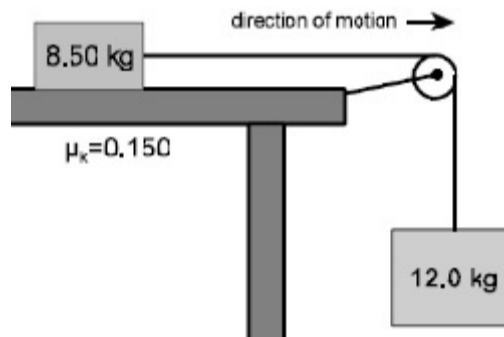
1. In the diagram below, two objects are suspended from the ends of a massless string passing over a frictionless pulley. What is the magnitude of the acceleration of these masses?

- (A) 2.5 m/s^2
- (B) 4.9 m/s^2
- (C) 7.4 m/s^2
- (D) 9.8 m/s^2



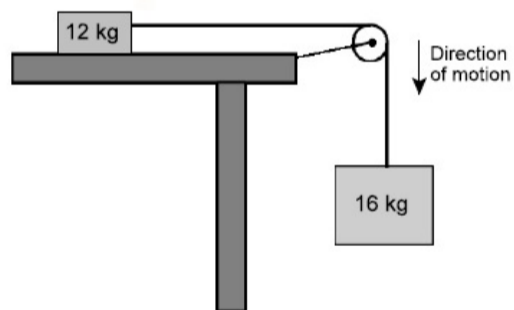
2. What is the acceleration of the system shown if $\mu_k = 0.150$?

- (A) 1.67 m/s^2
- (B) 5.13 m/s^2
- (C) 8.76 m/s^2
- (D) 12.4 m/s^2



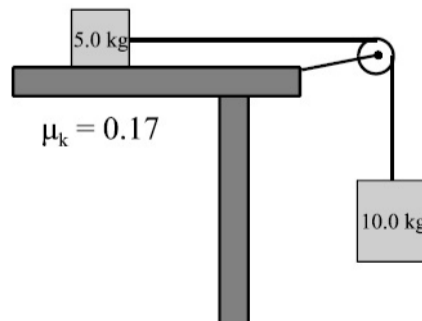
3. If the table below is frictionless, what is the acceleration of the 12 kg mass?

- (A) 1.4 m/s^2
- (B) 5.6 m/s^2
- (C) 9.8 m/s^2
- (D) 13 m/s^2



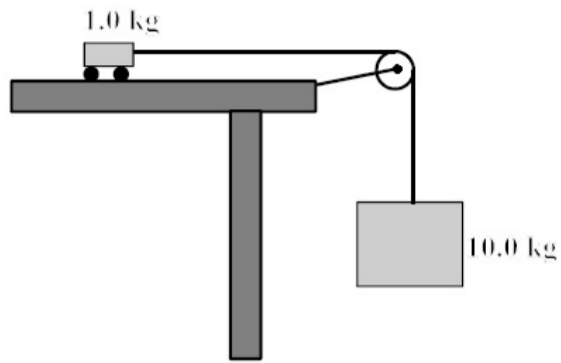
4. If the coefficient of kinetic friction between the 5.0 kg object and the table is 0.17, what is the magnitude of the acceleration of the system below?

- (A) 6.0 m/s^2
- (B) 6.5 m/s^2
- (C) 9.0 m/s^2
- (D) 9.8 m/s^2



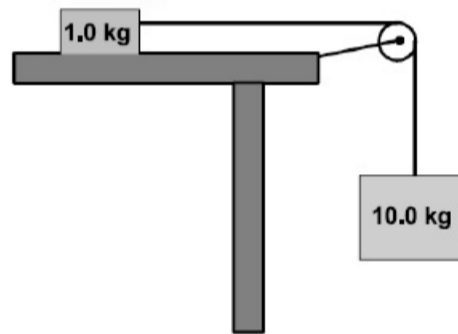
5. The diagram below shows a 1.0 kg object connected to a 10.0 kg mass. Assuming the force of friction is 10.0 N, what is the acceleration of the system?

- (A) 8.0 m/s^2
 (B) 8.8 m/s^2
 (C) 8.9 m/s^2
 (D) 9.8 m/s^2



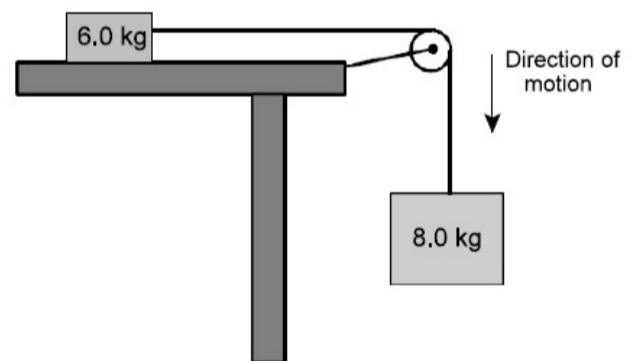
6. The diagram below shows a 1.0 kg cart connected to a 10.0 kg mass. Assuming the surface is frictionless, what is the acceleration of the system if the net force is 98.0 N?

- (A) 8.9 m/s^2
 (B) 9.8 m/s^2
 (C) 11 m/s^2
 (D) 98 m/s^2



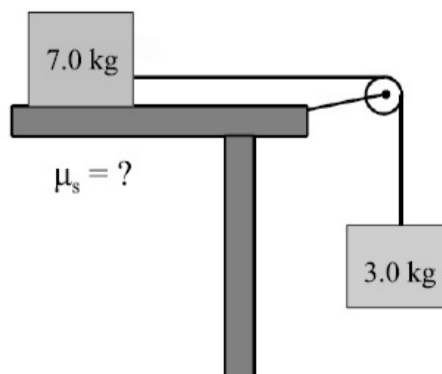
7. In the diagram shown, the acceleration of the system is 4.6 m/s^2 . What is the force of friction acting on the 6.0 kg box?

- (A) 14 N
 (B) 42 N
 (C) 64 N
 (D) 78 N



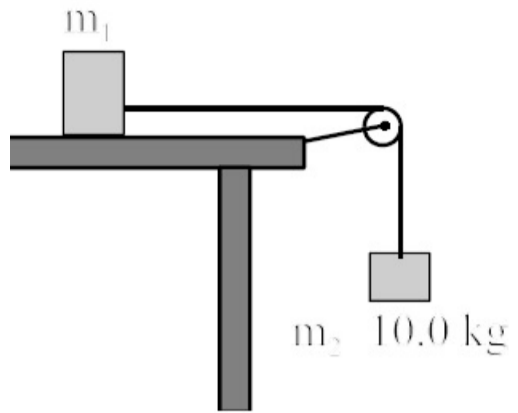
8. If the system below is at rest, what is the coefficient of static friction?

- (A) 0
 (B) 0.30
 (C) 0.43
 (D) 0.70

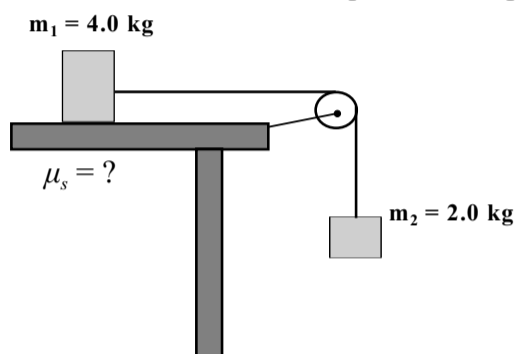


9. In the diagram below, the tension in the string joining the two masses is 12.0 N. If friction is negligible, what is the mass of m_1 ?

- (A) 1.10 kg
 (B) 1.40 kg
 (C) 2.00 kg
 (D) 10.0 kg



10. In the diagram below, two masses are connected by a light string over a frictionless, massless pulley. What coefficient of static friction is required to keep m_1 from slipping?



- (A) 0.33
 (B) 0.50
 (C) 0.67
 (D) 2.0

11. A 20.0 N force is applied to a 2.0 kg mass at 30.0° to the horizontal as shown in the diagram below. If friction is negligible, what is the tension in the string?
 AUGUST 2006

[5]

