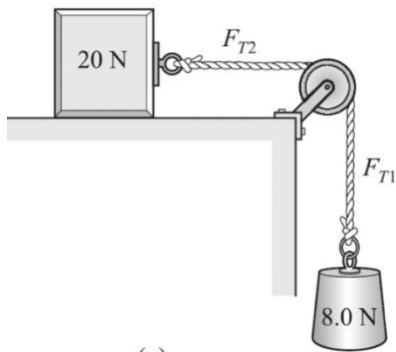


Newton's Laws 3

You can use 10 m/s/s for the value of g

Name _____

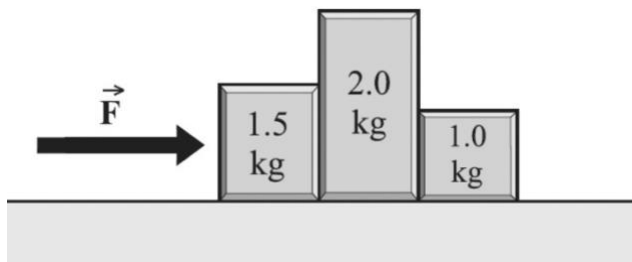
1. A 2 kg and .8 kg mass are connected by a light cord. The surface is frictionless.



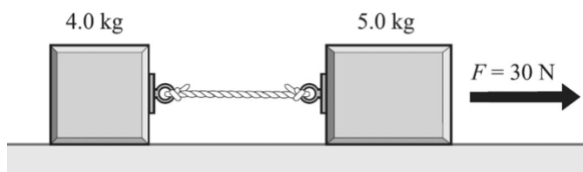
(a)

Find the acceleration of the masses and the tension in the cord.

2. Find the acceleration of these masses and the net force acting on the 2 kg mass if

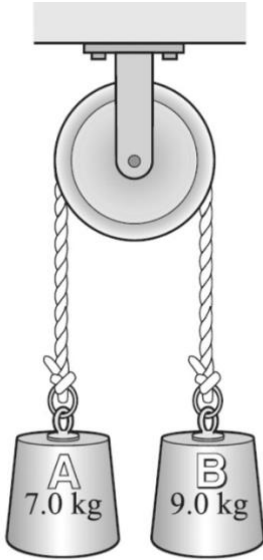


the force F is 9 Newtons. Ignore friction.

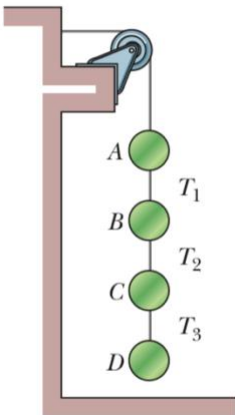


3. Find the tension in the rope. Ignore friction

4. Find the acceleration of these masses and the tension in the rope.

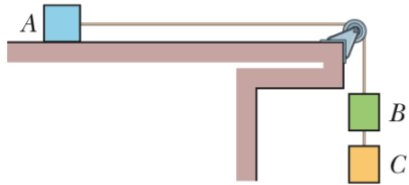


5. All four masses are 1 kg and are connected by light strings. Find the tension in each

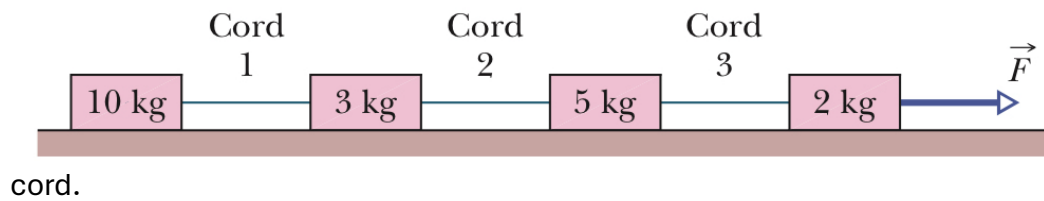


section of string.

6. All three blocks have a mass of 1 kg. The surface is frictionless. Find the acceleration of the masses and the tension in the string connecting mass B and C.



7. The force F is 100 Newtons, and the surface is frictionless. Find the tension in each



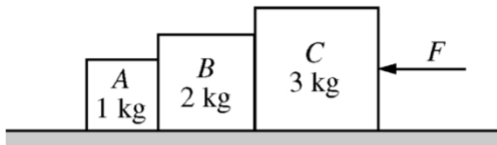
8.



Two 4 kg blocks hang from a rope that passes over two frictionless pulleys, as shown in the figure above. What is the tension in the horizontal portion of the rope if the blocks are not moving and the rope and the two pulleys have negligible mass?

- (A) 4 N
- (B) 8 N
- (C) 20 N
- (D) 40 N
- (E) 80 N

9



Three blocks, A , B , and C , of masses 1, 2, and 3 kg, respectively, are initially at rest on a frictionless surface as indicated in the figure above. What force F has to be applied on block C to accelerate the three blocks at 2 m/s^2 ?

- (A) 0.33 N
- (B) 1.5 N
- (C) 3.0 N
- (D) 6.0 N
- (E) 12 N

10. What is the acceleration of the block if the surface is frictionless?

