

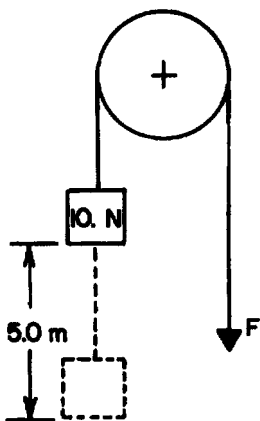
Machines

Name: _____

Date: _____

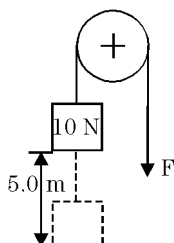
1. In the diagram, 55 joules of work is needed to raise a 10-newton 5.0 meters. How much work is done to overcome friction as the weight is raised?

A. 5J B. 5.5J
C. 11J D. 50J



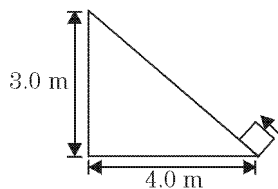
2. In the diagram, 55 joules of work is needed to raise a 10-newton weight 5.0 meters at a constant speed. How much work is done to overcome friction as the weight is raised?

A. 5J B. 5.5J
C. 11J D. 50J



3. A 20-newton block is at rest at the bottom of a frictionless incline as shown in the diagram. How much work must be done against gravity to move the block to the top of the incline?

A. 10J
B. 60J
C. 80J
D. 100J



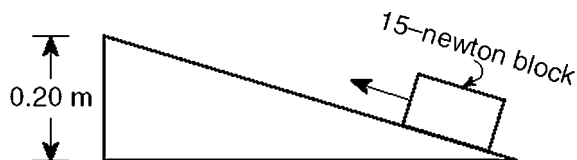
4. Base your answer(s) to the following question(s) on the information below.

A 680-newton student runs up a flight of stairs 3.5 meters high in 11.4 seconds. The student takes 8.5 seconds to run up the same flight of stairs during a second trial.

Determine the work done by the 680-newton student in climbing the stairs. [Show all calculations, including the equation and substitution with units.]

5. Determine the power developed by the student during the 11.4-second climb. [Show all calculations, including the equation and substitution with units.]

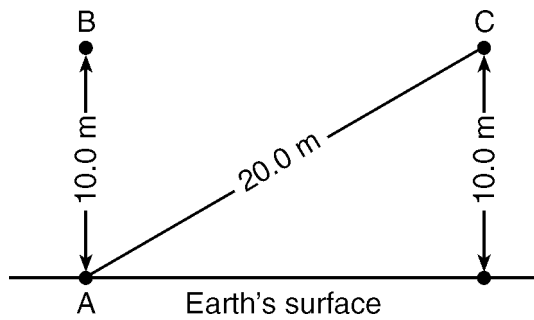
6. A block weighing 15 newtons is pulled to the top of an incline that is 0.20 meter above the ground, as shown.



If 4.0 joules of work are needed to pull the block the full length of the incline, how much work is done against friction?

A. 1.0J B. 0.0J C. 3.0J D. 7.0J

7. The diagram below shows points A , B , and C at or near Earth's surface. As a mass is moved from A to B , 100. joules of work are done against gravity.



What is the amount of work done against gravity as an identical mass is moved from A to C ?

- A. 100.J B. 173 J C. 200.J D. 273 J

Machines 06/17/2014

1.
Answer: A
2.
Answer: A
3.
Answer: B
4.
Answer: 2400 J or 2400 N · m
5.
Answer: 208.8 J/s
6.
Answer: A
7.
Answer: A