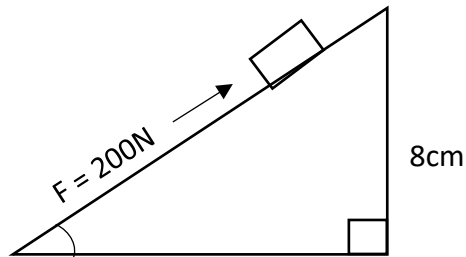


WORK

1. Define work and state its SI unit.
2. Explain why in trying to push a rigid wall, a person is said to be doing no work.
3. How much work is required to lift a 2 kilogram mass to a height of 10 metres (Take $g=10 \text{ m/s}^2$).
4. A garden tractor drags a plough with a force of 500 N at a distance of 2 metres in 20 seconds. How much work is done?
5. Define work done and give its SI unit.
6. Calculate the work done by a force of 12 N when it moves a body through a distance of 15 m in the direction of that force.
7. Determine the work done by a person pulling a bucket of mass 10 kg steadily from the well through a distance of 15 m.
8. A car moves with uniform speed through a distance of 40 m and the net resistive force acting on the car is 3 000 N. (a) (b) (c) 5. 6.
 - a. What is the forward driving force acting on the car? Explain your answer.
 - b. Calculate the work done by the driving force.
 - c. State the useful work done.
9. A student of mass 50 kg climbs a staircase of vertical height 6 m. Calculate the work done by the student.
10. A block was pushed by a force of 20 N through 9 m. Calculate the work done.
11. A box of mass 50 kg is pushed with a uniform speed by a force of 200 N up an inclined plane of length 20 m to a vertical height for 8 m in the figure below.

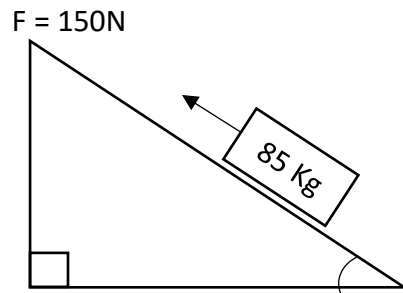


12. Calculate the:
 - a. Work done to move the box up the inclined plane.
 - b. Work done if the box was lifted vertically upwards.
13. A body of mass 85 kg is raised through a vertical height 6 m through an inclined plane as shown below.

Calculate the:

 - a. Slant distance.
 - b. Work done by the force 150 N.
 - c. Work done, if the body was lifted vertically upwards.

- d. Work done against friction.
- e. Frictional force between the body and the track.



14. A block of mass 60 kg was raised through a vertical height of 7 m. If the slant height of a frictionless track is 21 m, and the force used to push the block up the plane is 800 N, calculate the work done in pushing the block.
15. A car engine offers a thrust of 2 500 N to ascend a sloppy road for 1.1 km. At the top of the slope, the driver realized that the attitude change was 200 m. If the mass of the car is 1.2 tones, calculate the;
 - a. Work done by the car engine.
 - b. Work done against resistance.