

Work



The word work has several meanings to different people. Your parent or guardian probably leaves for work every day. Homework is something that a teacher assigns you to do at home on your own time. In science, work has a different meaning.

Work is the result of a force applied to an object and the measure of the distance that object has moved. In mathematical terms, **Work = Force X Distance**. In this equation force is measured in Newtons (N) and distance is measured in meters (m). One Newton-meter is equal to one Joule (J). Joules therefore define the amount of work that has been done on an object. Machines do work. In order for work to be done on an object, a force must move it. If you were to push on a brick wall all day as hard as you could, even though you may feel like you have done work, no work would have been done since the wall never moved.



Complete the following work problems. The first one has been done as an example for you. Remember Work (J) = Force (N) X Distance (m)

1. $20J = 10N \times 2m$
2. $20J = \text{force?} \times 2m$
3. $\text{work?} = 10N \times 500m$
4. $\text{work?} = .2N \times 600m$
5. $5000J = 500N \times \text{distance?}$
6. $\text{work?} = 82N \times 76m$
7. $\text{work?} = 820N \times 205m$
8. $\text{work?} = 20N \times 0m$
9. Here's one to think about. If you drove Kip's oxidized red landcruiser with broken bumper 5,000 miles and then parked it exactly where you started, would you have done any work?

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Updated August 7, 2000 by: [Glen Westbrook](#)

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