



Name: \_\_\_\_\_

Date \_\_\_\_\_

### Work and Energy Quiz

**Multiple Choice** *Choose the best answer for each of the questions.*

1. You push on a wall for a long time. Even though you feel tired, your physics teacher states that you have done no work. He states this because -
  - (a) The distance the wall moved is zero.
  - (b) The force applied is zero.
  - (c)  $\cos \theta$  is zero.
  - (d) He is wrong.
2. In which of the following situations is no work done?
  - (a) You push a box across a floor
  - (b) You lift an orange.
  - (c) You apply a centripetal force to a ball on a rope.
  - (d) You push a heavy couch up a ramp into a moving van.
3. A kid pushes a chair at a constant speed with a force of 30 N. The chair moves a distance of 2 meters. How much work was done?
  - (a) 0 J
  - (b) 15 J
  - (c) 30 J
  - (d) 60 J
4. A traveler is pulling a suitcase along a horizontal floor by directing a force  $35^\circ$  above horizontal. If the traveler uses a force of 70N and pulls the briefcase a distance of 45m, how much work did he do?
  - (a) 2450 J
  - (b) 2580.329 J
  - (c) 3150 J
  - (d) 110250 J
5. A machine does 400J of work while moving a heavy box 5m using a force of 100N. What is the angle between the force applied and the distance?
  - (a)  $0^\circ$
  - (b)  $0.644^\circ$
  - (c)  $36.87^\circ$
  - (d)  $90^\circ$



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**True or False** *Mark each question as either TRUE or FALSE*

- \_\_\_\_\_ 1. Doing work on an object causes that object's energy to change.
- \_\_\_\_\_ 2. All potential energy is due to gravity.
- \_\_\_\_\_ 3. Work and energy have the same units.
- \_\_\_\_\_ 4. Force and work are the same thing, just with different units.
- \_\_\_\_\_ 5. Kinetic energy is best described as energy of motion.
- \_\_\_\_\_ 6. You do more work playing tag than studying all night for a test.
- \_\_\_\_\_ 7. Potential Energy is best described as stored energy.
- \_\_\_\_\_ 8. To have potential energy an object must be at rest.
- \_\_\_\_\_ 9. Double the force over the same distance will double the work.
- \_\_\_\_\_ 10. It takes less work to push a couch up a ramp than to lift it straight up.

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Total Points Earned: \_\_\_\_\_

Corrected by: \_\_\_\_\_