Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Period\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Work**

***The equation for work in a system is W=Fd***

***Work can also be calculated as the change in energy (W=∆E)***

1. A box is pushed with a force of 50N up a ramp for 8 meters. How much work was done?
2. A 5N stone is carried downstream by a river and deposited 100 meters away. How much work was done?
3. A 250N child is carried by his mother for a distance of 50 meters. How much work was done?
4. You pull a 400N wagon for 600 meters. What was the total work done?
5. How much work would you need to do to push a 100N block up a ramp for a distance of 6 meters?
6. A car with a force of 15000N drives a distance of 100 meters. How much work was done by the car?
7. What is the KE of a bicycle rider with a mass of 60kg traveling at a velocity of 4m/s?
8. How much work would it take to stop the rider from question #7?
9. What is the KE of a bicycle rider with a mass of 50kg traveling at a velocity of 5m/s?
10. How much work would it take to stop the rider from question #9?
11. What is the KE of a jogger with a mass of 30kg traveling at a velocity of 3m/s?
12. How much work would it take to stop the jogger from question #11
13. What is the PE of a box that has a mass of 20kg and sits 5 meters above the ground?
14. What is the PE of a box that has a mass of 10kg and sits 10 meters above the ground?
15. What is the PE of a box that has a mass of 25kg and sits 3 meters above the ground?
16. What is the KE of a bicycle rider with a mass of 70kg traveling at a velocity of 3m/s?
17. What is the momentum of the rider in question #16?
18. What is the momentum of the rider in question #7?
19. What is the momentum of the rider in question #9?
20. What is the momentum of the jogger in question #11?
21. A roller coaster has the potential energy (PE) of 800J and kinetic energy (KE) of 200 at the highest point. What is the total amount of energy in the system?
22. The roller coaster from #21 is now near the bottom of the course and its KE is now 700. What is its PE?
23. A 1kg ball is thrown at a wall with a velocity of 50m/s and returns at a velocity of 48m/s. What is its change in momentum (∆mv)?
24. What is the net force on a block that is being pushed 30N to the right with a frictional force of 6N acting against it?
25. If the block from #24 has a mass of 12kg, what is its acceleration?
26. If the block from #24 is initially at rest, how fast will it be moving after 4 seconds?