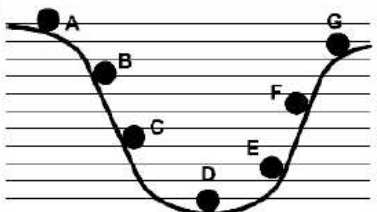
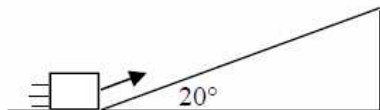


Name: _____
 Period: _____

Work and Energy In Class Review

<p>1. Work</p> <p>2. Power</p> <p>3. Kinetic Energy</p> <p>4. Potential Energy</p> <p>5. Potential Elastic Energy</p>	<p>A. Rate of doing work; how fast you transfer energy.</p> <p>B. Energy of position or height.</p> <p>C. Applied energy; can create energy.</p> <p>D. Energy of something that can be compressed.</p> <p>E. Energy due to motion and inertia.</p>	<p>6. Law of Conservation of Energy</p> <p>7. Rate</p> <p>8. Work-Kinetic Energy Theorem</p> <p>9. Energy</p> <p>10. Perpetual motion</p>	<p>A. How fast something is done.</p> <p>B. An object that moves forever without added energy.</p> <p>C. A change in kinetic energy comes from work.</p> <p>D. Energy can be transformed, but not created nor destroyed.</p> <p>E. Stored work; ability to create forces or cause motion.</p>
<p>11. Chemical</p> <p>12. Nuclear</p> <p>13. Mechanical</p> <p>14. Thermal</p> <p>15. Electrical</p> <p>16. Radiant</p>	<p>A. Energy stored in the atom.</p> <p>B. Energy stored in molecular bonds.</p> <p>C. Caused by friction. Heat.</p> <p>D. Due to moving electrons.</p> <p>E. From light.</p> <p>F. Any kinetic or potential energy.</p>	<p>18. A person pulls down with 50 N to lift an object 1 m.</p> <p>A) Since there are three support ropes, how much rope is pulled out by the 50N force?</p> <p>B) What is W_{in}?</p> <p>C) What is W_{out}?</p> <p>D) Calculate efficiency.</p> <p>E) How much energy was lost?</p> <p>F) Where did it go?</p> <p>G) If the pulley was 100% efficient, how much force would you have needed?</p>	
<p>17. Which of the following shows positions from highest to lowest kinetic energy?</p> <p>i. E, G, F</p> <p>ii. E, F, A</p> <p>iii. A, F, D</p>			
<p>19. A more powerful motor does more work. True or false?</p> <p>20. In the same amount of time a more powerful motor:</p> <p>21. How much energy does a 60 W light bulb use in 2 minutes? (Be sure to use seconds.)</p> <p>22. A 70 kg person climbs up 2 meters in 2.8 seconds.</p> <p>A) How much PE did they gain?</p> <p>B) How much power did they use?</p>		<p>23. A. Which of the 3 forces does no work on the object?</p> <p>B. Find the <i>total work</i> done on the 6 kg mass.</p> <p>C. If there is no friction, how much energy does it gain?</p> <p>24. You hold onto a book for an hour.</p> <p>A. Does your body get tired?</p> <p>B. Does your body use energy?</p> <p>C. Do you do any work on the object?</p> <p>D. Why?</p>	
<p>25. $KE = PE$</p> <p>26. $W = PE_{el}$</p> <p>27. $KE - W = 0$</p> <p>28. $PE - W = KE$</p> <p>29. $W = PE$</p> <p>30. $PE_{el} = KE$</p>		<p>31. A. Find the energy of the 2 kg object at A</p> <p>B. PE at C =</p> <p>C. KE at B =</p> <p>F. How would friction affect the energy at B?</p>	

32. Can a simple machine ever have an efficiency greater than 100%? Why or why not?



33. A frictionless ramp is inclined at 20° . An object going 6 m/s slides up.
A) Find the final height of the object.

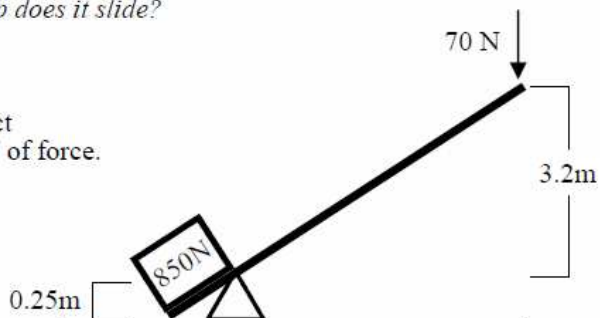
B) *How far up the ramp does it slide?*

34. A person pushes down on a lever 3.2 meters to lift a 850 N object 0.25 meters up. The person pushes down on the lever with 70 N of force.

A. $W_{in} =$

B. $W_{out} =$

C. Calculate the efficiency of the lever.



35. A 1.2 kg rock is dropped from 20 meters. The rock is going only 15 m/s just before it hits the ground because of air friction.

A) How far does friction act on the rock?

B) How far does the rock drop?

C) Does all of the PE turn into KE?

D) Does friction add or subtract energy?

E) Find the force of air friction on the rock.

36. A 6 kg object going 2 m/s speeds up to 7 m/s due to a 4 N force.

A) How many meters does the force act?

B) What is the acceleration of the object?

37. A 4 kg mass going 6 m/s stops by compressing a spring 1.3 meters. Find the spring constant of the spring. (VEO—variables and equation only. Give equations, put in numbers, and do not solve.)

38. A 5 kg object is dropped from 30 meters up. How fast is it going 10 meters above the ground?