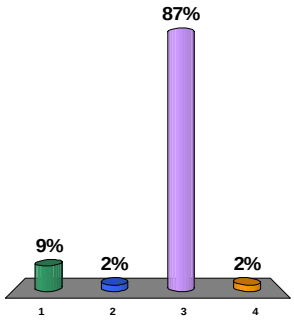
In-class activities

January 19, 2010

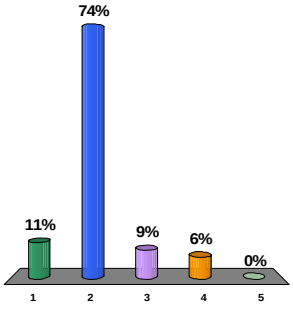
Whereas impulse involves force and time, work involves force and

1. energy.
2. acceleration.
3. distance.
4. power.



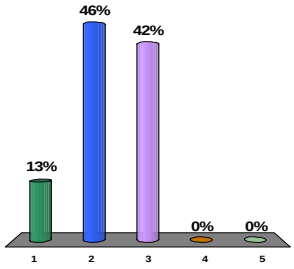
Raising an auto on a service station rack requires work. Raising it twice as high requires

1. the same work
2. twice the work.
3. twice the power.
4. Half the work
5. Half the power.



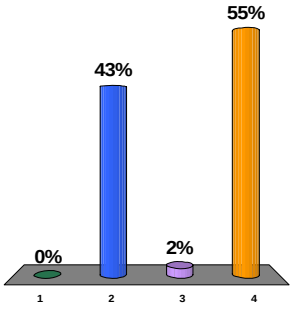
Raising an auto on a service station rack requires work. Raising a twice-as-heavy auto the same vertical distance requires

1. the same work.
2. twice the work.
3. twice the power.
4. Half the work
5. Half the power.



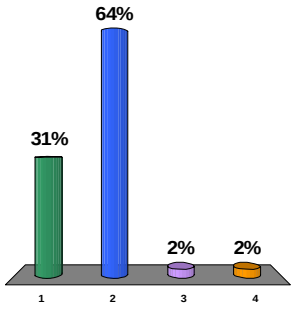
If an object has momentum, it must also have

1. potential energy.
2. kinetic energy.
3. work.
4. All of the above.



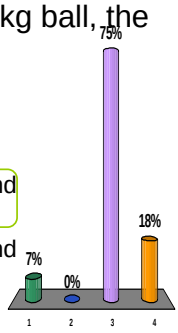
If an object has kinetic energy, it must also have

1. potential energy.
2. momentum.
3. power.
4. impulse.



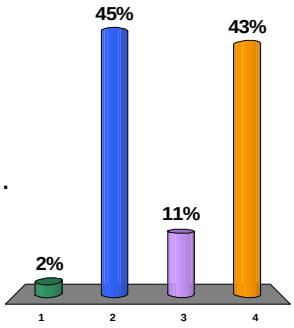
A 1-kg iron ball and a 10-kg iron ball are dropped from rest from the top of a one-story building. When hitting the ground below, compared with the 1-kg ball, the 10-kg ball has

1. less momentum and KE.
2. the same momentum and KE.
3. 10 times as much momentum and 10 times as much KE.
4. 10 times as much momentum and 100 times as much KE.



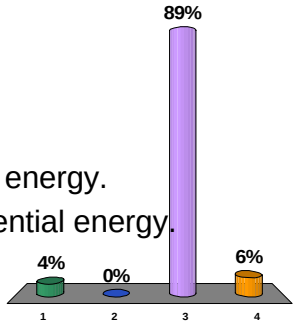
When a car is braked to a stop, unless it is a hybrid, its kinetic energy is transformed to

1. stopping energy.
2. potential energy.
3. energy of motion.
4. heat. ✔



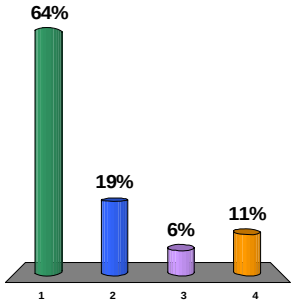
When a hybrid car brakes to a stop, much of its kinetic energy is transformed to

1. heat.
2. work.
3. electric potential energy.
4. gravitational potential energy.



A machine can multiply forces or

1. distances. ★
2. work.
3. energy.
4. All of the above.



A heavy object and a light object that are allowed to fall from the same height have equal

1. total energies.
2. momenta.
3. Both of the above.
4. None of the above. ➡