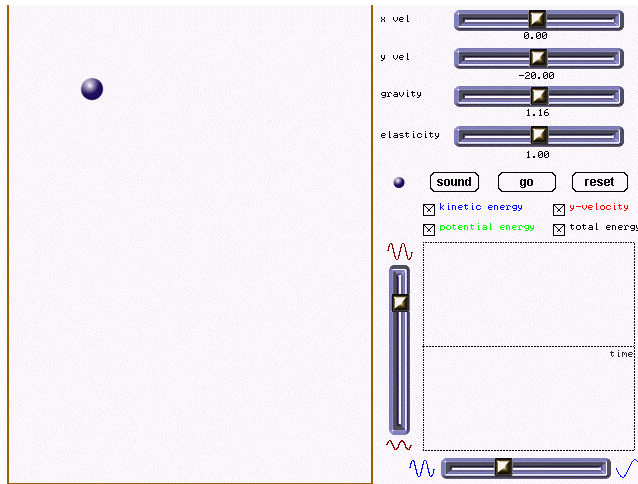
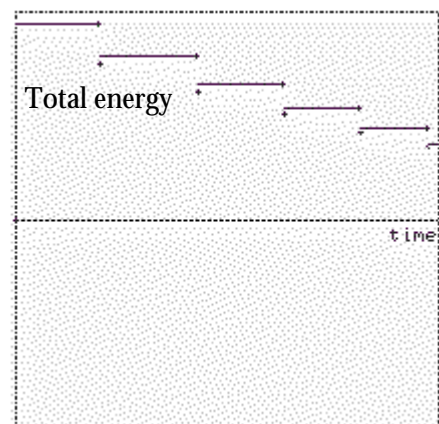
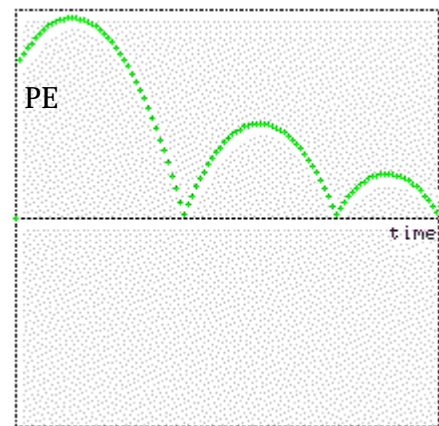
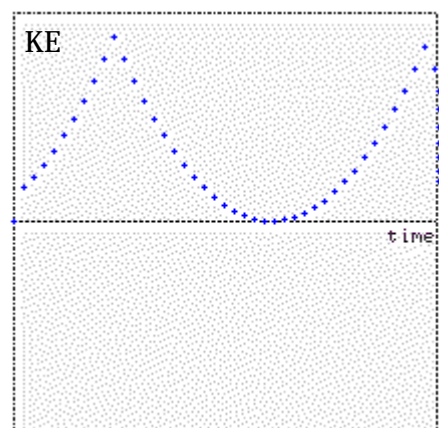
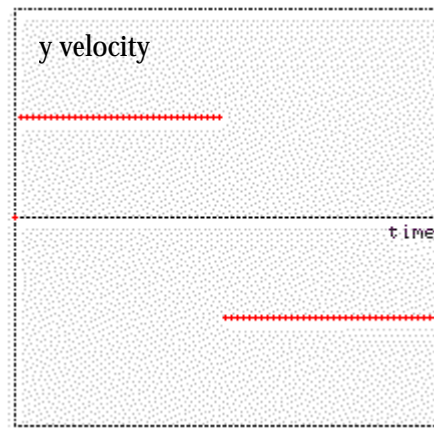


WORKSHEET : BOUNCING BALL

This is what it looks like. Explore and play with the controls.



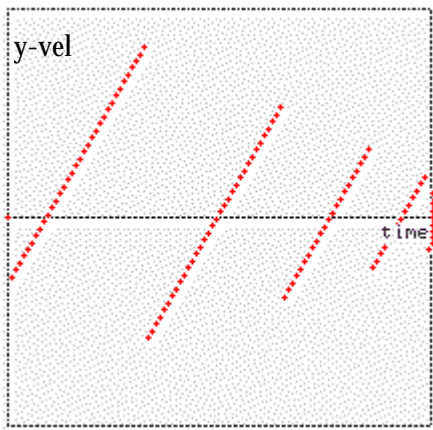
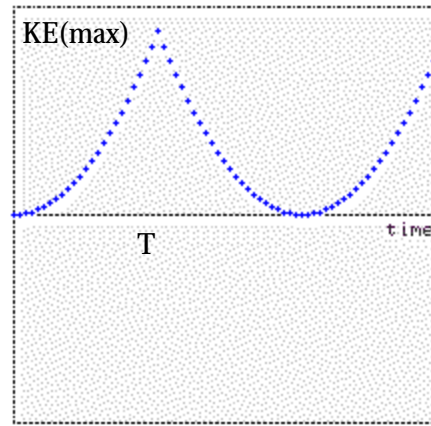
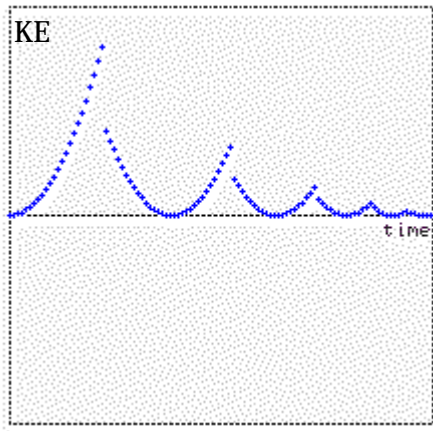
Try to obtain the following graphs:



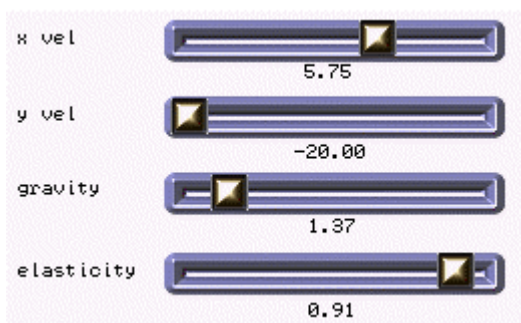
- Can you simulate the following situations?
 - Boy releases a ball,
 - Girl throws a ball vertically upward,
 - Man projects a ball at angle of 45° to the horizontal, (-45° , 60° or any other angle?)
 - Uniform horizontal/vertical motion.
- Set the graph to plot velocity as well as kinetic energy. Why do you think the kinetic energy graph is shaped this way? How is this graph related to the velocity-time graph?
- If the elasticity value is set to less than 1.00, the ball loses some of its speed upon impact. What happens to the lost kinetic energy?
- Now set the movie to plot the potential energy and total energy graphs as well. How is the total energy graph related to the other energy graphs?
- If a ball of a different mass is used, will it affect the graphs plotted (given the same settings)?
- How will the presence of air-resistance affect the graphs?

Describe the motions of balls following graphs like these. Try to visualise what is happening and then test it out with the movie.

How would you obtain expressions for the maximum value of the kinetic energy and time T in the following graph, given that the initial height from which it falls is H .



Given slider values that look like the following, how do you think the ball will move? Describe what you think the motion will be like, then test it out.



Bugs? Comments?
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