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| **PH 201 Post-Lab 09** | **Conservation of Energy** | **Name** |  |

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| 1. In this week’s lab you examined the conservation of energy by observing a mass start with all gravitational potential energy, have it convert much of it to kinetic energy as it moved and then have it convert some of that energy back into gravitational potential energy. For this conservation of mechanical energy to be accurate you had to make a major assumption about the process occurring in lab, what was this assumption? |
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| 2. Based on your results, was this a reasonable assumption? |
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| 3. A mass of 0.025 kg falls a distance of 0.35 m, what is the change in the gravitational potential energy of the mass. Please use units of joules and include a sign. |
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| 4. A mass of 0.025 kg has a kinetic energy of 0.090 J, what is the mass’s speed (in units of m/s, please)? |
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| 3. A mass of 0.045 kg is attached to a string (L = 0.65 m) and allowed to swing as a pendulum. When the mass is at the bottom of the swing, draw a free body diagram. |
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| 4. Assume the mass (m = 0.045 kg) has a speed of 4.35 m/s at the bottom of the swing (L = 0.65 m), how high above the bottom of the swing would the mass travel before pausing momentarily and then swing back the other way? |
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| 5. Again assume the mass (m = 0.045 kg) has a speed of 4.35 m/s at the bottom of the swing, (L = 0.65 m) what is the tension in the string? |
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