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| **PH 201 Post-Lab 11** | **Conservation of Momentum** | **Name** |  |

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| Cart 1 has a mass of .490 kg and while passing through photogate 1 its speed is measured to be 0.758 m/s. Cart 2 has a mass of 0.520 kg and is at rest until the collision occurs when Cart 1 hits Cart 2. |
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| 1. What is the momentum of Cart 1 initially? |
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| $$p\_{1}=$$ |  |

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| 2. What is the momentum of Cart 2 initially? |
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| $$p\_{2}=$$ |  |

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| 3. If after the collision Cart 1 stopped completely, what is the velocity of Cart 2 after the collision? Regardless of what you found for questions 1 and 2 use  |
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| $p\_{1b}=0.410 ^{kg m}/\_{s}$ and $p\_{2b}=0^{kg m}/\_{s}$. |
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| $$v\_{2f}=$$ |  |

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| 4. If instead, after the collision Cart 1 has a velocity of -0.010 m/s (“-“sign indicates Cart 1 is going opposite direction after than the direction it initially had), what is the velocity of Cart 2 after the collision? Once again, Regardless of what you found for questions 1 and 2 use $p\_{1b}=0.410 ^{kg m}/\_{s}$ and $p\_{2b}=0^{kg m}/\_{s}$. |
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| $$v\_{2f}=$$ |  |

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| 5. Describe what an “elastic” collision is: |
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| 6. Describe what a “totally inelastic” collision is: |
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