|  | \# | 6 | question | Answer |  |  | 0 | <--score |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| \# | * 1 | 600 | $\mathrm{m} / \mathrm{s}$ is the velocity of a 250 gram bullet fired from a gun. Find the momentum for one bullet. |  | 150 | 100 | 0 |  |
| \# | + 2 | 6 | $\mathrm{m} / \mathrm{s}$ is the velocity of 100 kg Boris, running towards you. How many bullets (exactly) would it take to stop Boris? |  | 4 | 100 | 0 |  |
| \# | + 3 | 240 | kg is your mass, including the wheeled bed you are on. Calculate your velocity after stopping Boris. |  | 2.5 | 100 | 0 |  |
| \# | + 4 | 120 | $\mathrm{m} / \mathrm{s}$ is the velocity of a 1200 kg car going north that crashes into an eastbound car of mass 3000 kg going $20 \mathrm{~m} / \mathrm{s}$. Find the angle (east of north)the wreck moves off if the cars stick together. |  | 22.619 | 100 | 0 |  |
| \# | + 5 | 120 | $\mathrm{m} / \mathrm{s}$ is the velocity of a 500 gram baseball. Find the momentum |  | 60 | 100 | 0 |  |
| \# | * 6 | 120 | If this ball hits your mit at 0.2 seconds, find the force. |  | 300 | 100 | 0 |  |
| \# | + 7 | 48 | kg is the mass of a block hit by a 300 gram bullet going $200 \mathrm{~m} / \mathrm{s}$. Find the $\Delta \mathrm{h}$ for the block |  | 7.87e-2 | 100 | 0 |  |
| \# | + 8 | 180 | $\mathrm{m} / \mathrm{s}$ is the velocity of your car as it hits a tree. Your 50 kg body is slowed to zero in 0.8 seconds by the seatbelts. Find the force. |  | 11250 | 100 | 0 |  |
| \# | + 9 | 180 | Find the force if you instead hit the windshield taking 0.02 seconds |  | 450000 | 100 | 0 |  |
| \# | \# 10 | 30 | $\mathrm{m} / \mathrm{s}$ is the velocity of a cart that hits an identical cart standing still. Find the final velocity of the carts if they stick together. |  | 15 | 100 | 0 |  |

Extra Credit: Explain how two pool balls colliding, one moving off to the right, one to the left demonstrates conservation of momentum.

