

Planet Holloway **websheet 6.1**

Cp Physics Momentum

You may print this out and write on it or work on your own paper.

Show all work.

1. A 4.8 kg package is falling at 3 m/s, what is the momentum of the object?
2. In the problem above, what is the momentum 5 seconds later?
3. A 0.2 kg baseball is thrown at 35 m/s and hit the opposite direction by a batter at 55 m/s. What is the magnitude of the objects change in momentum?
4. Two objects are dropped from the top of a building on Planet Holloway. If object A is 3 times the mass of object B, what is the momentum of object A compared to object B?
5. Two objects of the same mass are launched from separate cannons. If object A has three time the velocity of object B, what is the momentum of object A compared to object B.

¡Bonus!

6. Two skaters stand facing each other. One skater's mass is 40 kg and the other's is 55 kg. If the skaters push each other away without spinning how do their velocities compare?

Answers:

1. 14.4 kg-m/s
2. 254.4 kg-m/s
3. 18 kg-m/s
4. A has 3 times the momentum of B because they both have the same velocity
5. A has 3 times the momentum of B because they both have the same mass.
6. Good luck! – Use conservation of momentum.