Planet Holloway - **websheet 4.1**
Cp Physics - Forces and Newton's Laws of Motion
You may print this out and write on it or work on your own paper.
Show all work.

1. A 4.8 kg package at rest is pushed with a force of 6 N for 2 seconds. What is the acceleration of the package?

2. In the problem above, what is the velocity at the end of the 2 seconds?

3. A 7.3 kg pumpkin has an acceleration of 2.3 m/s/s to the left. If it is being pushed by a farmer using a force of 62 N from the right and a zombie from the left, what is the magnitude of the force on the left from the zombie?

4. What is the mass and weight of a 9 kg squirrel on earth and on the moon? (Acceleration on the moon is g/6.)

5. A banana with a weight of 50 N (yes, that's a big banana) is dropped on the grass during a soccer match. A player kicks the banana upward with a force of 85 N. What is the resulting acceleration while the banana is in contact with his foot (being kicked)? What is the acceleration immediately after losing contact with his foot?

   ¡Bonus!

6. A volleyball player sets the ball, 0.7 kg, straight up using a force of 27 N for a brief 0.6 seconds. If the ball was travelling straight down at 5 m/s when the player first made contact with the ball, how high does the ball go?

Answers:

1. 1.25 m/s/s
2. 2.5 m/s
3. 45.21 N
4. on earth, m = 9 kg, w = 90 N; on moon, m = 9 kg, w = 15 N
5. 7 m/s/s while in contact; - 9.8 m/s/s after contact (only gravity acting on it now)
6. 9.5 m or 7.37 m from release