Planet Holloway **websheet 4.1**
AP Physics C - Chapter 4
You may print this out and write on it or work on your own paper.
Show all work.

1. An evil clown applies an evil force of 70 N to a 40 N watermelon during an evil performance at an evil circus. What is the resulting acceleration of the watermelon?

2. Two hockey players arrive and hit the puck, 0.4 kg, at the same instant. One applies a force of 65 N and the other hits with a force of 38 N at a right angle to the first player. What is the resulting acceleration of the puck?

3. Two forces act on a 0.75 kg box of chocolates. One of the forces is known to be 4 N and the resulting acceleration is 12 m/s/s. What is the largest magnitude that the second force can be?

4. The acceleration due to gravity on the moon is $1/6^{th}$ that on Earth. What force would be required to cause a 80 kg astronaut to accelerate at 5 m/s/s on the moon?

5. A 250 kg raft experiences a westward force of 80 N from paddling the oars and a 60 N force northwest from the current. What is the resulting magnitude and direction of the resulting acceleration?

6. A student rocking out to music at home runs down their hardwood floored hall and slides to a stop in their socks, ala *Risky Business*. If the student has a mass of 60 kg and has an initial speed of 7 m/s and stops in 2.6 m, what is the average force of friction acting on them?

Answers:

1. 17.5 m/s/s

2. 188.2 m/s/s

3. 13 N

4. 400 N

5. 0.52 m/s/s @ 19.1 degrees north of west

6. – 565.4 N