Phy 113: Physics of Sports
Homework Problems
Set #1: Due Wednesday, September 5, 2018

Note: Students are encouraged to work together and discuss the problems. However, each student must arrive at her/his own final answers. Copied homework will result in zero. Show all your work step by step and do not just write down answers.

1. (5 points) Aaron Judge, a Yankee slugger, who holds the record of the longest home run in history (after the home run distances were tracked officially) is 6’ 7” tall. How many cm is this?

2. (6 points) (a) Simone Biles, who won gold medals in both the individual and team all-around competitions at the Rio de Janeiro Olympics and also is considered to be the best female gymnast ever, weighs 104 lbs. How many kg is this? (b) On the other hand, the heaviest 2018-19 season NY Giants player is Damon Harrison (DT). He weighs 341 lbs, more than three times the weight of Simone! How many kg is this?

3. (6 points) Kylian Mbappé who scored the winning goal at the World Cup Final is 178 cm tall and weighs 78.2 kg. How tall is he in feet and inches, and how heavy is he in lbs?

4. (10 points) Logan Thomas of Virginia Tech holds the NFL combine-record for fastest football pass at 60 mph. What is the speed of his pass in km/h and m/s?

5. (10 points) The 2018 Indy 500 race (102nd) was won by Will Power (What a great name!), and his average speed was 74.7 m/s! What was his average speed in mph?

6. (10 points) At the Rio Olympics Eliud Kipchoge of Kenya won the gold medal for men in the marathon at 2 hours 08 minutes 44 seconds. What was his average speed in mph? What is this in m/s?

7. (12 points) Usain Bolt won the men’s 200-m sprint race in the 2009 World Championship game in Berlin at 19.19 s. What is his average speed in m/s, ft/s, km/h and mph?