Problem 1
What is the total length of all the hair on an average woman’s head? What is the total area of all this hair?

Problem 2
Estimate how many physics papers are published worldwide each year.

Problem 3
How far does a car travel before a one-molecule-thick layer of rubber is worn off the tires?

Problem 4
What is (a) the kinetic energy and (b) the momentum of a drifting continent? Is this large or small? (Ignore the rotation and other motion of the Earth. We are only interested in the motion of the continent with respect to the rest of the Earth.)

Problem 5
In the movie Spider-Man 2, Spider-Man stops a runaway New York City six-car subway train by attaching his webs to nearby buildings and pulling really hard for 10 or 20 city blocks. How much force does he have to exert to stop the subway train? Give your answer in Newtons and in tons (1 ton = 104 N). How does this compare to the force that you can exert?