Conversion Problems

Conversion factors that I need to *memorize* by the first quiz:

LENGTH	**MASS**	**VOLUME**
1 km = _____ m	1 kg = _____ g	1 L = _____ mL
1 m = _____ cm	**1 kg = _____ lbs**.	
1 inch = _____ cm		**TIME**
1 mile = _____ km		**1 hour = _____ sec**
1 mile = _____ m	Factors in **BOLD** will be used all the time!	

Example problems**: Please put your final answer in a box!**

1. Change 14.5 inches to cm.

2. If you are driving at 65 mph, how many meters per second are you traveling?

3. 55 m^2 = _____ cm^2

You must show all of your work for credit.

LEVEL 1: One-Step Conversions

1. 65.2 cm = _____ in

2. How many miles tall is Mount Everest if it measures 8,840 meters?

3. If you weigh 152 lbs, how many kg are you?

LEVEL 2: Multi-Step Conversions

4. 31 m/s = _____mph   **(You will do this type of conversion all the time)**

5. 72 mph = _____ m/s   **(You will do this type of conversion all the time)**

6. You are traveling 100 km/hour and the speed limit is 65 miles per hour. Could you be pulled over for speeding? (yes/no and speed for full points)

7. You find the density of steel in lab to be 7.9 g/mL. What is the density in kg/L?

LEVEL 3: More Complicated Conversions (The answers are listed so you can check your work)

8. How many cm^2 are in 1.45 m^2? *(14,500 cm^2)*

9. How many seconds are in 1.75 years? (Use 365 days in a year) (5.5 x 10^7 sec)

10. Convert 23.5 meters into feet. (There are **NOT** 3 feet in a meter. Be exact!) (77.1 ft)

LEVEL 4: Tricky conversions   **Pick 1 of the 3 below to complete and write out all the steps you followed to solve it.**

11. Light travels at a speed of 3.0 x 10^8 m/sec. How many **meters** will light travel in a year? How many **miles** will it travel? (Assume 365 days in 1 year) (9.46 x 10^{15} m)

_____ meters
_____ miles

12. Joe eats one Big Mac every day for lunch. If each Big Mac contains 29 grams of fat, how many pounds of fat will he consume in his lifetime just from Big Macs if he eats them for 54 years?   *(Assume 365 days per year.) (≈ 1,257 lbs.)*

13. Max raised 60 goats, then entered into a series of business transactions. He traded all the goats for sheep at an exchange rate of 3 goats for 7 sheep. Next, he exchanged all the sheep for hogs at a rate of 6 sheep for 2 hogs weighing 250 lbs. each. He sold all the hogs at a market price of $55.00 per 100 lbs. How much money did he make from the 60 goats? *(≈ $6417)* **Ignore the fact that you are working with a decimal number of animals** ☺