Pre-Lesson Quiz

1. How much of the national debt do you owe if the debt is $18,700,000,000,000 and the US population is 322,000,000 people? ([http://www.usdebtclock.org/](http://www.usdebtclock.org/) 12/01/2015)

2. If it takes four tires to manufacture a car which creates revenue of $25,000, what is the maximum revenue possible from 120 tires?

3. If a person wishes to travel .0025873 meters, how many kilometers would they be travelling?

4. There are 157,000,000 garbage dumps in a country and the average garbage dump has 0.025 metric tons of trash in each. How many metric tons of trash are in this nation's garbage dumps?

5. One extra-large fish tank can hold 264,170,000,000 liters of water and each liter of water costs $1.50. If you wanted to fill the tank to the brim with water, what is the total cost of the water in the tank?
Pre-Lesson Quiz - ANSWER KEY

1. How much of the national debt do you owe if the debt is $18,700,000,000,000 and the US population is 322,000,000 people? (http://www.usdebtclock.org/ 12/01/2015)

$18,700,000,000,000 = 1.87 \times 10^{13}$ dollars

$322,000,000 = 3.22 \times 10^{8}$ people

\[
\frac{(1.87 \times 10^{13} \text{ dollars})}{(3.22 \times 10^{8} \text{ people})} = 5.807453 \times 10^{4} \text{ dollars / person}
\]

2. If it takes four tires to manufacture a car which creates revenue of $25,000, what is the maximum revenue possible from 120 tires?

120 tires = $1.2 \times 10^{2}$ tires

$25,000$ dollars = $2.5 \times 10^{4}$ dollars

\[
(1.2 \times 10^{2} \text{ tires}) \times (1 \text{ car / 4 tires}) \times (2.5 \times 10^{4} \text{ / 1 car}) = 7.5 \times 10^{5} \text{ dollars}
\]

3. If a person wishes to travel .0025873 meters, how many kilometers would they be travelling?

0.0025873m = $2.5873 \times 10^{-3} \text{ m}$

1 m = $1 \times 10^{-3} \text{ km}$

\[
(2.5873 \times 10^{-3} \text{ m}) \times (1.0 \times 10^{-3} \text{ km / 1 m}) = 2.5873 \times 10^{-6} \text{ km}
\]

4. There are 157,000,000 garbage dumps in a country and the average garbage dump has 0.025 metric tons of trash in each. How many metric tons of trash are in this nation's garbage dumps?

157,000,000 garbage dumps = $1.57 \times 10^{8}$ garbage dumps

0.025 tons = $2.5 \times 10^{-2}$ tons

\[
(1.57 \times 10^{8} \text{ garbage dumps}) \times (2.5 \times 10^{-2} \text{ tons / 1 garbage dump}) = 3.925 \times 10^{6} \text{ tons}
\]

5. One extra-large fish tank can hold 264,170,000,000 liters of water and each liter of water costs $1.50. If you wanted to fill the tank to the brim with water, what is the total cost of the water in the tank?

264,170,000,000 liters = $2.6417 \times 10^{11}$ liters

\[
(2.6417 \times 10^{11} \text{ liters}) \times (1.50 \text{ dollars}) = 3.963 \times 10^{11} \text{ dollars}
\]