A light-year is nearly 9.5 trillion kilometers. This is an unbelievably large number that is so huge, no one can possibly comprehend just how large it is compared to a walk to the local store, or a drive to Grandma's! Even by astronomical standards, astronomers rarely work with numbers this large. The total number of stars in the Milky Way is 'only' measured in the billions. The distance to the farthest reaches of the visible universe is 'only' 14 billion light years. Let's bring this huge number 'one trillion' down to Earth by looking at the 2006-2007 finances of the United States and the world.

US Statistics for 134 million taxpayers:

| 1Federal Income Tax revenue                              | \$ 2.2 | trillion. |
|--|--------|-----------|
| 2Federal Government expenses                             | \$ 2.6 | trillion. |
| 3The Gross Domestic Product (National wealth)            | \$12.9 | trillion  |
| 4Consumer debt (credit cards, loans etc)                 | \$ 2.5 | trillion  |
| 5Total Mortgage debt (commercial and residential)        | \$ 6.5 | trillion  |
| 6Total federal debt (including unfunded programs)        | \$59.1 | trillion  |
| 7External debt owed to other countries                   | \$16.3 | trillion  |
| 8Total retirement assets (401k, private pensions, etc)   | \$16.1 | trillion  |
| 9Annual income for US taxpayers                          | \$ 7.4 | trillion  |
| World Statistics for 6 billion people:                   |        |           |
| 10Gross World Product                                    | \$65.8 | trillion  |
| 11Debt to World banking                                  | \$40.0 | trillion  |
| 12Value of all the shares on all the world stock markets | \$66.6 | trillion  |
| 13Yearly exports   | \$ 6.6 | trillion  |

13...Yearly exports

14... Insurance premiums (life and non-life)

15...Assets of 9.5 million wealthiest individuals.

Problem 1 - What was the average Gross Domestic Product wealth for each US taxpayer?

Problem 2 - What was the average consumer debt for each US Taxpayer?

Problem 3 - About how much mortgage debt does each US taxpayer have?

Problem 4 - What is the total federal debt for each taxpayer including unfunded programs (like Social Security and Medicaid)?

Problem 5 - What percentage of the taxpayer annual income is paid in the federal Income Tax each year?

Problem 6 - What percentage of the world's wealth (Gross World Product) is the US wealth?

Problem 7 - About how much money does each taxpayer have in retirement assets in the US?

Problem 8 - Comparing the US taxes to the US government expenses, how much debt does the US generate each year?

Problem 9 - What is the average wealth per person in the world?

Problem 10 - What percentage of the world population includes the richest individuals?

Problem 11 - What is the average wealth of the non-richest individuals?

Space Math

http://spacemath.gsfc.nasa.gov

\$ 3.7 trillion

\$37.2 trillion

## Answer Key:

US Statistics for 134 million taxpayers:

| 1Federal Income Tax revenue                              | \$ 2.2 | trillion. |
|--|--------|-----------|
| 2Federal Government expenses                             | \$ 2.6 | trillion. |
| 3The Gross Domestic Product (National wealth)            | \$12.9 | trillion  |
| 4Consumer debt (credit cards, loans etc)                 | \$ 2.5 | trillion  |
| 5Total Mortgage debt (commercial and residential)        | \$ 6.5 | trillion  |
| 6Total federal debt (including unfunded programs)        | \$59.1 | trillion  |
| 7External debt owed to other countries                   | \$16.3 | trillion  |
| 8Total retirement assets (401k, private pensions, etc)   | \$16.1 | trillion  |
| 9Annual income for US taxpayers                          | \$ 7.4 | trillion  |
| World Statistics for 6 billion people:                   |        |           |
| 10Gross World Product                                    | \$65.8 | trillion  |
| 11Debt to World banking                                  | \$40.0 | trillion  |
| 12Value of all the shares on all the world stock markets | \$66.6 | trillion  |
| 13Yearly exports   | \$ 6.6 | trillion  |
| 14 Insurance premiums (life and non-life)                | \$ 3.7 | trillion  |
| 15Assets of 9.5 million wealthiest individuals.          | \$37.2 | trillion  |

Problem 1 - What was the average Gross Domestic Product wealth for each US taxpayer? Answer: \$12.9 trillion/134 million = \$12,900,000 million/134 million = \$96,300.

Problem 2 - What was the average consumer dept for each US Taxpayer?

Answer: \$2.5 trillion/134 million = \$2,500,000 million/134 million = \$18,600 Problem 3 - About how much mortgage debt does each US taxpayer have?

Answer: \$6.5 trillion/134 million = \$6,500,000 million/134 million = \$48,500 Problem 4 - What is the total federal debt for each taxpayer including unfunded programs (like Social Security and Medicaid)?

Answer: \$59.1 trillion/134 million = \$59,100,000 million/134 million = \$441,000 Problem 5 - What percentage of the taxpayer annual income is paid in the federal Income Tax each year?

Answer: (\$2.2 trillion / \$7.4 trillion) x 100% = 29.7%

Problem 6 - What percentage of the world's wealth (Gross World Product) is the US wealth? Answer: ( \$12.9 trillion / \$65.8 trillion) x 100% = 19.6 %

Problem 7 - About how much money does each taxpayer have in retirement assets in the US?

Answer: \$16.1 trillion / 134 million = \$16,100,000 million/134 million = \$120,000 Problem 8 - Comparing the US taxes to the US government expenses, how much debt does the US generate each year?

Answer: \$2.2 trillion - \$2.6 trillion = \$0.4 trillion or \$400 billion Problem 9 - What is the average wealth per person in the world?

Answer: \$65.8 trillion / 6 billion = 65,800 billion/6 billion = 11,000 per person Problem 10 - What percentage of the world population includes the richest individuals?

Answer: (9.5 million / 6 billion) x 100% = 0.16 %

Problem 11 - About what is the average wealth of the non-richest individuals?

Answer: (\$65.8 trillion - \$37.2 trillion) / 6 billion people = \$4,700 per person