Amazon River

The Amazon River in Brazil contributes more water to Earth's oceans than any other river. Each second, it discharges 4.2×10^6 cubic feet of water into the Atlantic Ocean.

How much water does the Amazon River discharge into the Atlantic Ocean each year?

Amazon River

$$\frac{4.2 \times 10^6 ft^3}{sec} \times \frac{60\ sec}{1\ min} \times \frac{60\ min}{1\ hr} \times \frac{24\ hr}{1\ day} \times \frac{365\ days}{1\ yr} = 4.2 \times 10^6 \times 3.1536 \times 10^7$$

$$13.24512 \times 10^{13} = 1.324512 \times 10^{14}$$

Computer processing

A computer can perform 4.66×10^8 calculations per second. How many calculations can this computer perform in one minute?

How many calculations can a computer make in 3.1×10^4 minutes?

Computer Processing

$$\frac{4.66 \times 10^8 calculations}{sec} \times \frac{60\ sec}{1\ min} = 279.6 \times 10^8 = 2.796 \times 10^{10}$$

$$4.66 \times 10^8 \times 3.1 \times 10^4 = 14.446 \times 10^{12} = 1.4446 \times 10^{13}$$

Heartbeat

Consider a person whose heart beats 70 times per minute and who lives to be 85 years old. Estimate the number of times the person's heart beats during his or her life. Do not acknowledge leap years. Write your answer in decimal form and in scientific notation.

Heartbeat

$$\frac{70 \ beats}{min} \times \frac{60 \ min}{hr} \times \frac{24 \ hr}{day} \times \frac{365 \ days}{year} \times 85 \ years = 3.12732 \times 10^{9}$$