Quiz 1.2 – Measurements and Numbers

Name: _____

## Question 1

Give the total number of significant figures and the position of the least significant digit in each quantity"

$1.250\,g$        $6.022 \times 10^{23}$        $0.00215\,L$        $3500\,km$        $2.590 \times 10^{-7}\,m$

## Question 2

Give the solution to each expression with the proper number of significant figures

$x = 23.14\,cm + 4.105\,cm$        $x = \dfrac{0.12\,mol}{1.53\,L}$        $x = 94\,\mu s - 8.7 \times 10^{-5}\,s$        $x = \dfrac{12.4\,g + 1.94\,g}{20.4\,cm^3 - 3.47\,cm^3}$

## Question 3

Later in this course we will use the following equation: $v_{rms} = \sqrt{\dfrac{3RT}{M}}$

Find the units of $v_{rms}$ if $R$ has units $\dfrac{J}{mol\,K}$, $T$ has units $K$, $M$ has units $\dfrac{kg}{mol}$, and $J \equiv \dfrac{kg\,m^2}{s^2}$

## Question 4

Convert the value $80.0\,\dfrac{miles}{h}$ to units of $m/s$

## Question 5

Light travels at a speed of $2.998 \times 10^8\,m/s$

o How many $s$ does it take for light to travel from the surface of the earth to the moon and back ($478,000\,miles$)?

o How far does light travel in one minute?

*Птичка* (*A Little Bird*)

**By Александр Сергеевич Пушкин (Alexander Sergeyevich Pushkin)**

В чужбине свято наблюдаю
Родной обычай старины:
На волю птичку выпускаю
При светлом празднике весны.

Я стал доступен утешенью;
За что на бога мне роптать,
Когда хоть одному творенью
Я мог свободу даровать!


In alien lands I keep the body
Of ancient native rites and things:
I gladly free a little birdie
At celebration of the spring.

I'm now free for consolation,
And thankful to almighty Lord:
At least, to one of his creations
I've given freedom in this world!