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"

$1.250\,g$ 6.022×10^{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 $80.0\,\dfrac{miles}{h}$ to units of m/s

Question 5

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

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

○ 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!