

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”

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

Question 2

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

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

Question 3Later in this course we will use the following equation: $v_{rms} = \sqrt{\frac{3RT}{M}}$ Find the units of v_{rms} if R has units $\frac{J}{mol\text{ K}}$, T has units K , M has units $\frac{kg}{mol}$, and $J \equiv \frac{kg\text{ m}^2}{s^2}$ **Question 4**Convert the $80.0 \frac{\text{miles}}{\text{h}}$ to units of m/s **Question 5**Light travels at a speed of $2.998 \times 10^8\text{ m/s}$

- How many s does it take for light to travel from the surface of the earth to the moon and back ($478,000\text{ miles}$)?
- How far does light travel in one minute?

Птичка (A Little Bird)

Ву 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!