Numbers and Significant Figures Quiz

Question 1

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

$$2.590 \times 10^{-7} \, m$$

Question 2

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

$$x = 23.14 \, cm + 4.105 \, cm$$

$$x = \frac{0.12 \, mol}{1.53 \, L}$$

$$x = 94 \,\mu s - 8.7 \times 10^{-5} \,s$$

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

Question 3

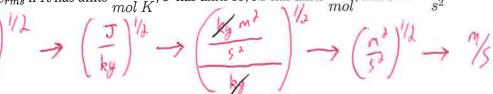
Later in this course we will use the following equation: $v_{rms} = \sqrt{\frac{3RT}{M}}$

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



$$\rightarrow \left(\frac{J}{ky}\right)$$





Question 4

Complete the following table:

Decimal Quantity	Scientific Notation	Prefix Notation	
0.0045m	4.5 · 10 m	7.5 mm	
36,000,000 m	3.6.10 ⁴ m	$36\ Mm$	
0.000 000 560 m	$5.60\times10^{-7}m$	560 nm -or- 0.56	oum