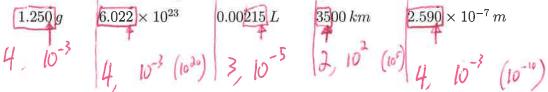
### Quiz 1.2 – Measurements and Numbers

#### Question 1

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



### Question 2

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

Give the solution to each expression with the proper number of significant figures 
$$x = 23.14 \, cm + 4.105 \, cm$$
  $x = \frac{0.12 \, mol}{1.53 \, L}$   $x = 94 \, \mu s - 8.7 \times 10^{-5} s$   $x = \frac{12.4 \, g + 1.94 \, g}{20.4 \, cm^3 - 3.47 \, cm^3}$   $x = \frac{12.4 \, g + 1.94 \, g}{20.4 \, cm^3 - 3.47 \, cm^3}$   $x = \frac{12.4 \, g + 1.94 \, g}{20.4 \, cm^3 - 3.47 \, cm^3}$   $x = \frac{12.4 \, g + 1.94 \, g}{20.4 \, cm^3 - 3.47 \, cm^3}$   $x = \frac{12.4 \, g + 1.94 \, g}{20.4 \, cm^3 - 3.47 \, cm^3}$   $x = \frac{12.4 \, g + 1.94 \, g}{20.4 \, cm^3 - 3.47 \, cm^3}$ 

# 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  $J \equiv \frac{kg\ m^2}{c^2}$ Squark K = \ md = M

Convert the  $80.0 \frac{miles}{h}$  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?

$$\frac{1 \text{ min} | 60 \text{ s} | 2.998 \cdot 10^8 \text{ m}}{1 \text{ min} | 15} = 1.799 \cdot 10^{10} \text{ m}$$