

Measurement HW #3 **ANSWERS**

name _____

Significant Figures, Density & Temperature

Show work, use formulas, use lots of paper (paper is cheap, knowledge is valuable).

measurement	How many significant figures in this
56.7 grams	3
0.005 grams	1
2.0 kJ	2
6.02×10^{23} atoms	3
5 fingers*	1 or unlimited
100 liters	1
100. liters	3
100.0 liters	4
99.99 mg	4
99.9074 mg	6
99.99900 mg	7
2008 years	4
the answer of $3.456 \text{ g} \times 2.83 \text{ cm}^3$	3
the answer of $1.5 \text{ kg} + 2.35 \text{ kg}$	2
the answer of 2.2234 divided by 6.996541	5
88 keys on a piano*	2 or unlimited

2. A piece of unknown metal is determined to have a volume of 84.60 mL and a total mass of 618.43 grams. Determine which metal it could be, choice of 2.

$$\text{Density} = \frac{\text{mass}}{\text{volume}} = \frac{618.43 \text{ g}}{84.60 \text{ mL}} = 7.301 \text{ g/mL}$$

That makes this metal either indium or tin, both have the same density on Table S.

3. Do these temperature conversions, use formulas for each time.

Centigrade	Kelvin
-16.5°C	256.5 K
28.0°C	301 K
97.0°C	370 K
-34.0°C	239 K

$K = C + 273$
is your formula