

QUIZ 1B

NAME _____

Reylin

MM

Answer the following questions. Show your work where requested. If you simply provide an answer without showing work, you will receive only 1 point

1) The mass of an object, 4.55×10^{-3} g, expressed in decimal notation is 0.000455 g.

TRUE OR FALSE (CIRCLE ONE)

2) The number 4,450,000.0 has 8 significant figures.

TRUE OR FALSE (CIRCLE ONE)

3) The correct scientific notation for the number 500.0 is:

- A) 5×10^2 B) 5.00×10^2 C) 5.000×10^2 D) 5×10^{-2} E) none of the above

4) The correct number of significant figures in the number 1.250100 is:

- A) 5 B) 7 C) 4 D) ambiguous E) none of the above

5) Determine the answer to the following equation with correct number of significant figures:
 $106 \div 9.02 \times 1.9 =$ _____

- A) 22.32816 B) 22.328 C) 22.3 D) 22 E) none of the above

6) Which of the statements below is NOT part of the scientific method?

- A) observation and measurement
- B) formation of a hypothesis
- C) testing of a hypothesis by experimentation
- D) refinement of a hypothesis as needed
- E) All of the above steps are part of the scientific method.

7) Convert 9.08 ounces to kilograms? (16 oz = 1 lb; 1 kg = 2.20 lbs) **Show your work below for full credit**

- A) 1.25 B) 320 C) 0.258 D) 66.0 E) None of the above

$$\begin{array}{l|l|l} 9.08 \text{ oz} & 1 \text{ lb} & 1 \text{ kg} \\ \hline & 16 \text{ oz} & 2.20 \text{ lb} \end{array} = 0.257954$$

Round to 3 digits

8) Given the density of Au is 19.3 g/cm^3 , determine the mass of gold in an ingot with the dimensions of $25.4 \text{ cm} \times 10.2 \text{ cm} \times 7.62 \text{ cm}$. **Show your work below for full credit**

A) 3.81×10^4

B) 102

C) 2.32×10^3

D) 0.161

E) none of the above

$$D = \frac{m}{V} \rightarrow m = D \cdot V$$

$$V = (25.4 \text{ cm})(10.2 \text{ cm})(7.62 \text{ cm})$$

$$= 1974.1896 \text{ cm}^3 \text{ (round to 3 digits)}$$

$$m = \frac{19.3 \text{ g}}{\text{cm}^3} \cdot 1974.1896 \text{ cm}^3 = 38101.8 \text{ g} \Rightarrow \boxed{3.81 \times 10^4}$$

9) A plastic block has dimensions of $2.2 \text{ cm} \times 3.0 \text{ cm} \times 1.5 \text{ cm}$ and a mass of 12.4 grams. Will the block float in water and why? (Density of water = 1.00 g/mL) **Show your work below for full credit**

A) Yes, because the density of the block is 1.3 g/mL which is less than the density of water.

B) Yes, because the density of the block is 0.80 g/mL which is less than the density of water.

C) No, because the density of the block is 1.3 g/mL which is greater than the density of water.

D) No, because the density of the block is 0.80 g/mL which is greater than the density of water.

E) none of the above

$$D = \frac{m}{V} = \frac{12.4 \text{ g}}{(2.2 \text{ cm})(3.0 \text{ cm})(1.5 \text{ cm})} = \frac{12.4 \text{ g}}{9.9 \text{ cm}^3} = 1.2525 \text{ g/cm}^3$$

Round to 2 digits

$$\boxed{\frac{1.3 \text{ g}}{\text{cm}^3}}$$

10) Convert 2.41 mL to Liters? **Show your work below for full credit**

A) 2.41

B) 24.1

C) 241

D) 0.241

E) 0.0241

$$\frac{2.41 \text{ mL}}{1000 \text{ mL}} = \boxed{0.00241 \text{ L}}$$

or

$$\boxed{2.41 \times 10^{-3} \text{ L}}$$