

Test  
Measurement & Nanotechnology  
Grades 6 - 12

Answer the following True or False: **Circle One**

1. A liter contains 1,000 smaller units called milliliters.

True or False

2. A liter has a Volume of 1,000 cubic centimeters.

True or False

3. If we convert 6 543.219 meters, to kilometers we get 6.543 219 km.

True or False

4. Nanoscience is the study and development of materials and structures in the range of 1 nm ( $10^{-9}$  m) to 100 nanometers ( $100 \times 10^{-9}$  m =  $10^2 \times 10^{-9}$  =  $10^{-7}$ ) and the unique properties that arise at that scale.

True or False

Definition: Angstrom ( $A^\circ$ ) =  $10^{-10}$  meters

5. An angstrom  $A^\circ$  is greater than an nanometer.

True or False

End of True/False

Answers: 1. T 2. T 3. T 4. T 5. F 6. (c)  
7. (d) 8. (b) 9. (d) 10 (c)

Answer the following Multiple Choice Questions:

**Circle One** answer for each question.

6. A vitamin C tablet has a mass of 500 mg. That is the same as\_\_\_\_\_.

(a) 5 g (b) 0.05 g (c) 0.5 g (d) 0.5 kg

7. The length of a pencil would probably best be measured in \_\_\_\_\_.

(a) milligrams (b) meters (c) micrometers  
(d) centimeters

8. The unit of volume that is the same as one cubic decimeter is the \_\_\_\_\_.

(a) meter (b) liter (c) gram  
(d) millimeter

9. Determine the order of magnitude difference in the sizes of the radii for Atoms ( $10^{-10}$  meter) compared with neutrons ( $10^{-15}$  meter).

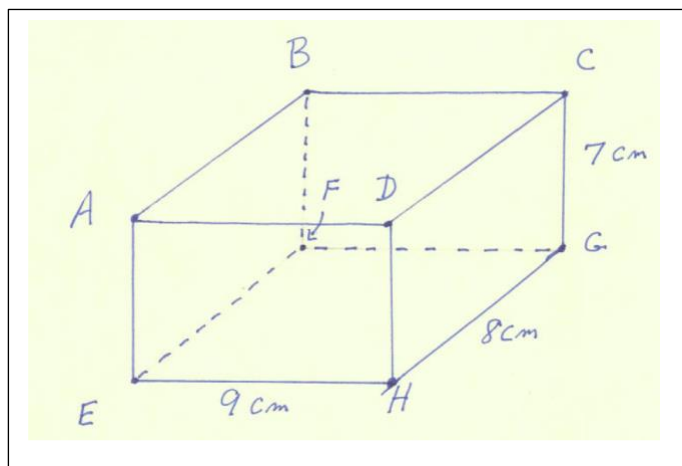
(a) Order 4 (b) Order 2 (c) order 12  
(d) Order 5

10. How long has it been legal to use the metric system in the U.S?.

(a) 1958.  
(b) 1975  
(c) 1866  
(d) 1921.

More Metric Questions including:  
Surface Area, Volume & Mass

Consider the box (rectangular Prism) 7 cm by 8 cm by 9 cm and then answer the questions;



Answer the Follow True or False: Circle the correct Answer and write the answer in the space provide.

1. The 7 cm by 8 cm by 9 cm box has a capacity less than one half liter (500 cm<sup>3</sup> or 500 mL).

(a) TRUE (b) FALSE 1. Answer \_\_\_\_\_

2. The 7 cm by 8 cm by 9 cm box has a Volume greater than 500 cm<sup>3</sup>.

(a) TRUE (b) FALSE 2. Answer \_\_\_\_\_

End of True/False

Answers: 1. (b) Volume = 504 cm<sup>3</sup> or 504 mL 2. (a)  
3. (b) {382 ; 7 x 8 + 7 x 9 + 8 x 9 and double } 4. (d) 5. (c)

Answer these Multiple Choice Questions:

3. What is the surface area of the 7 cm by 8 cm by 9 cm box?

3. Answer \_\_\_\_\_

(a) 191 cm<sup>2</sup> (b) 382 cm<sup>2</sup> (c) 94 cm<sup>2</sup> (d) 32 cm<sup>2</sup>

4. If the box is filled brim full of water what is the mass of the water?

4. Ans = \_\_\_\_\_ g

(a) 94 g (b) 382 g (c) 500 g (d) 504 g

5. Consider a Liter Cube (10 cm by 10 cm by 10 cm) and compare with the box above 7 cm by 8 cm by 9 cm.

What is the difference in their capacity (volumes) in mL.

5. Ans = \_\_\_\_\_

(a) 1 000 mL (c) 94 mL (c) 496 mL

(d) 940 mL

6. Hello my name is \_\_\_\_\_

and I am \_\_\_\_\_ cm tall which is \_\_\_\_\_ m.

7. Hello my School is \_\_\_\_\_

And we like the Metric System because: \_\_\_\_\_ \*\*\*

\_\_\_\_\_ \*\*\*

\_\_\_\_\_ \*\*\*\*

The End