Density Quiz

Name: ___________________________ Date: ______________

1. Base your answer(s) to the following question(s) on the Earth Science Reference Tables, the diagrams below, and your knowledge of Earth science. The diagrams represent four different mineral samples with different shapes and masses. Diagrams are not drawn to scale.

Which graph best represents the density of each sample?

A.  

B.  

C.  

D.  

2. A second sample of mineral A has a mass of 48 grams. What is the volume of this sample?

A. 24.0 cm³  
B. 16.0 cm³  
C. 12.0 cm³  
D. 4.0 cm³

3. The cartoon below presents a humorous look at science.

The correct explanation of why ice floats is that, compared to liquid water, solid ice

A. has less mass  
B. has more mass  
C. is less dense  
D. is more dense
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4. Base your answer(s) to the following question(s) on the Earth Science Reference Tables and on your knowledge of Earth science.

The diagram below represents a solid object with a density of 3 grams per cubic centimeter.

![Diagram of a solid object](image)

What is the mass of this object?

A. 0.5 g  
B. 2 g  
C. 18 g  
D. 36 g

5. Which graph best represents the relationship between mass and volume of a material that has a density of 5 grams per cubic centimeter?

A. 
![Graph A](image)

B. 
![Graph B](image)

C. 
![Graph C](image)

D. 
![Graph D](image)
6. Base your answer(s) to the following question(s) on the Earth Science Reference Tables, the diagrams below, and your knowledge of Earth science. The diagrams represent four solid objects made of the same uniform material. The volumes of the sphere and the bar are not given.

Which graph best represents the relative densities of the objects?

A.  

B.  

C.  

D.  

7. Base your answer(s) to the following question(s) on the 2001 edition of the Earth Science Reference Tables, the diagrams below, and your knowledge of Earth science. The diagrams represent two different solid, uniform materials cut into cubes $A$ and $B$.

What is the density of cube $A$?

A. 0.2 g/cm$^3$  
B. 5.0 g/cm$^3$  
C. 12.8 g/cm$^3$  
D. 64.0 g/cm$^3$
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8. What is the mass of cube B?
   A. 3 g  B. 9 g  C. 27 g  D. 81 g

9. Assume cube B was broken into many irregularly shaped pieces. Compared to the density of the entire cube, the density of one of the pieces would be
   A. less  B. greater  C. the same

10. The accompanying graph shows the relationship between mass and volume for three samples, A, B, and C, of a given material.

What is the density of this material?
   A. 1.0 g/cm³  B. 5.0 g/cm³  C. 10.0 g/cm³  D. 20.0 g/cm³
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1. Answer: B
2. Answer: B
3. Answer: C
4. Answer: C
5. Answer: A
6. Answer: D
7. Answer: B
8. Answer: D
9. Answer: C
10. Answer: C