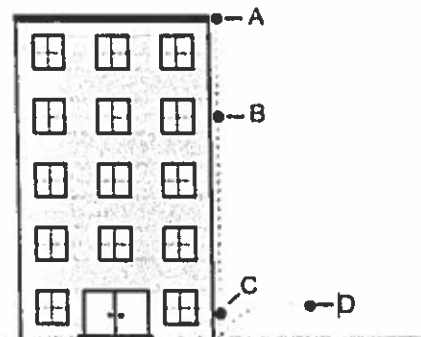


Name _____

_____ 1. A ball is dropped from the roof of a building. Points A, B, C, and D in the diagram below represent positions of the ball as it falls.

At which position will the ball have the greatest kinetic energy?

- (1) A (3) C
(2) B (4) D



_____ 2. Because copper is a metal, it is

- (1) liquid at room temperature (2) nonreactive with other substances
(3) a poor conductor of electricity (4) a good conductor of heat

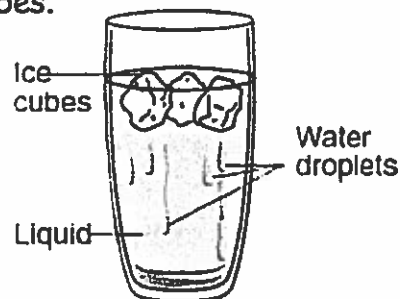
_____ 3. A student placed a rock in a graduated cylinder containing water, causing the water level in the cylinder to increase by 20 mL. This increase represents the rock's

- (1) mass (3) solubility
(2) volume (4) temperature

_____ 4. The diagram below shows a glass containing a liquid and ice cubes.

Which process causes water droplets to form on the outside of the glass?

- (1) evaporation (3) freezing
(2) condensation (4) melting



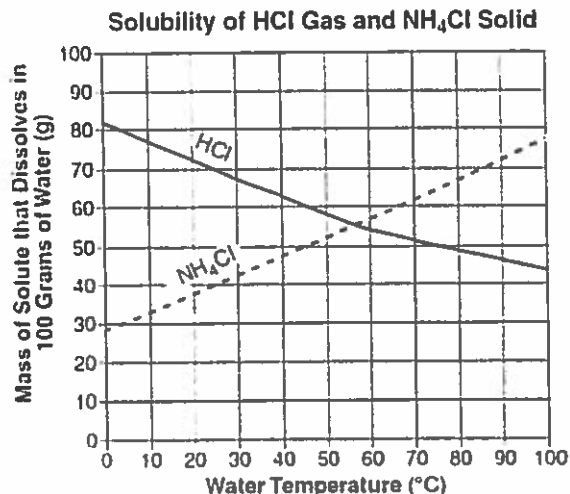
_____ 5. A battery-powered cart pulls an 800-gram load across the floor. If the load were reduced to 400 grams, and the force used to move the cart remained the same, the cart would

- (1) move slower (2) move faster (3) move at the same speed (4) stop moving

_____ 6. Which statement is an inference?

- (1) A thermometer shows that the air temperature is 56°F.
(2) A mineral sample of galena produced a gray-black streak when tested.
(3) Based on previous data, ten hurricanes may occur in the year 2013.
(4) A weather vane indicates the wind is coming from the west.

7. The graph below shows the mass of hydrogen chloride gas (HCl) and solid ammonium chloride (NH₄Cl) that dissolves in 100 grams (g) of water as the temperature of the water changes.



Determine the number of grams of NH₄Cl that will dissolve in 100 grams of water at 25°C.

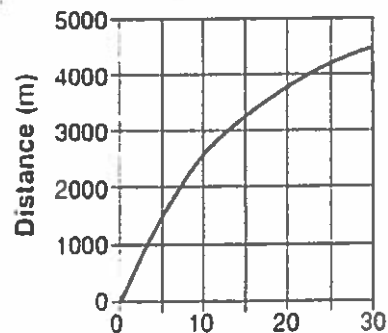
_____ grams

The chart below lists samples of three materials. Classify each sample in the chart as an element, a compound, or a mixture by circling the correct classification.

Sample	Classification (circle one)		
8. noble gas	element	compound	mixture
9. salt dissolved in water	element	compound	mixture
10. hydrogen chemically combined with oxygen	element	compound	mixture

The graph below shows a runner's distance from the starting line during a 30-minute race. Distance was measured in meters (m). Time was measured in minutes (min).

Distance vs. Time



11. During which time interval was the runner moving at the greatest average speed?

- (1) 0-5 minutes (3) 15-20 minutes
 (2) 10-15 minutes (4) 25-30 minutes

12. Under which conditions would a sugar cube dissolve most quickly when placed in a liter of water at room temperature?

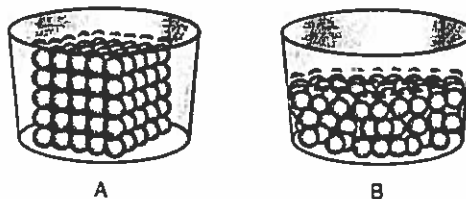
- (1) A whole sugar cube is added and the water is stirred.
- (2) A whole sugar cube is added and the water is not stirred.
- (3) A crushed sugar cube is added and the water is stirred.
- (4) A crushed sugar cube is added and the water is not stirred.

13. All of the liquid from a test tube is poured into a beaker, as shown in the diagram below. Compared to the liquid that was in the test tube, the liquid in the beaker has

- (1) a different volume, but the same shape
- (2) a different volume and a different shape
- (3) the same volume, but a different shape
- (4) the same volume and the same shape



14. Diagrams A and B show models of how the molecules of the same substance are arranged in two different phases of matter.



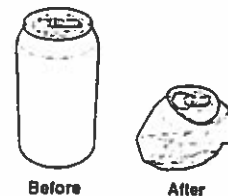
(Not drawn to scale)

Which phases of matter are represented by diagrams A and B?

Diagram A: _____

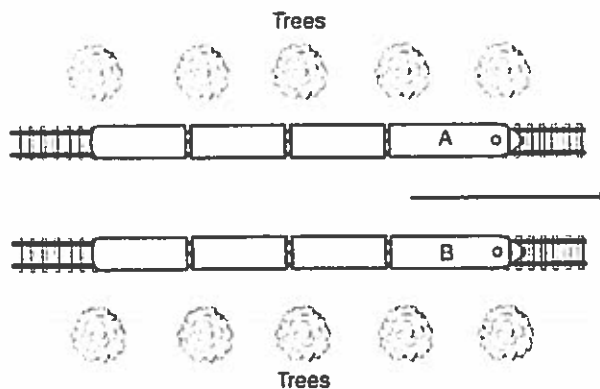
Diagram B: _____

15. This diagram shows an aluminum can before and after it was crushed.



Explain why crushing the aluminum can is an example of a physical change and *not* a chemical change.

The diagram shows an overhead view of two trains, *A* and *B*, traveling beside each other in the direction shown by the arrow.



16. When a passenger in train *A* looks at a passenger directly across in train *B*, it appears that train *B* is not moving, even though both trains are moving. How does the speed of train *A* compare to the speed of train *B*?

17. What visual evidence observed by the passengers in either train lets them know that their train is moving in the direction indicated by the arrow?
