1st MP - Quarterly Review I

1. Using a ruler to measure the length of a stick is an example of

   1) extending the sense of sight by using an instrument
   2) calculating the percent of error by using a proportion
   3) measuring the rate of change of the stick by making inferences
   4) predicting the length of the stick by guessing

2. In order to make observations, an observer must always use

   1) experiments
   2) the senses
   3) proportions
   4) mathematical calculations

3. Which statement about a rock sample is most likely an inference?

   1) The rock has flat sides and sharp corners.
   2) The rock is made of small, dark-colored crystals.
   3) The rock has thin, distinct layers.
   4) The rock has changed color due to weathering.

4. A student observed a freshly dug hole in the ground and recorded statements about the sediments at the bottom of the hole. Which statement is an inference?

   1) The hole is 2 meters deep.
   2) Some of the particles are rounded.
   3) The sediments were deposited by a stream.
   4) Over 50% of the sediments are the size of sand grains or smaller.

5. The primary purpose of a classification system is to enable people to

   1) make measurements that are very accurate
   2) eliminate inaccurate inferences
   3) organize observations in a meaningful way
   4) extend their powers of observation

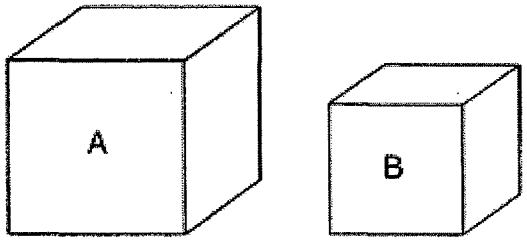
6. The grouping of objects or events based on similar characteristics is called

   1) observation 2) interpretation
   3) measurement 4) classification

7. The use of a triple-beam balance to determine the mass of a rock is an example of measuring by using

   1) all of the five senses
   2) inferences and interpretations
   3) a direct comparison with a standard
   4) a combination of dimensional quantities

Base your answers to questions **8** through **11** on the diagrams below, which represent two different solid, uniform materials cut into cubes *A* and *B*.



Mass of A = 320 g
Volume of A = 64 cm^3

Density of B = 3 g/cm^3
Volume of B = 27 cm^3

(Not drawn to scale)

8. If a parcel of air is heated, its density will

   1) decrease 2) increase
   3) remain the same

9. What is the mass of cube *B*?

   1) 9 g 2) 27 g 3) 3 g 4) 81 g

10. 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

    1) less 2) greater
    3) the same

11. What is the density of cube *A*?

    1) 0.2 g/cm^3 2) 5.0 g/cm^3
    3) 12.8 g/cm^3 4) 64.0 g/cm^3

____ 12 A student incorrectly measured the volume of a mineral sample as 63 cubic centimeters. The actual volume was 72 cubic centimeters. What was the student's approximate percent deviation (percentage of error)?

1) 9.0% 2) 12.5% 3) 14.2% 4) 15.3%

____ 13. The data table below shows the mass and volume of four different minerals.

Mineral Sample	A	B	C	D
Mass	50 g	60 g	55 g	40 g
Volume	20 mL	15 mL	10 mL	5 mL

Which mineral has the greatest density?

1) *A* 2) *B* 3) *C* 4) *D*

____ 14. Which description of change is most closely associated with ocean tides and moon phases?

1) cyclic and predictable
2) cyclic and unpredictable
3) noncyclic and predictable
4) noncyclic and unpredictable

____ 15. The elevation of a certain area was measured for many years, and the results are recorded in the data table below.

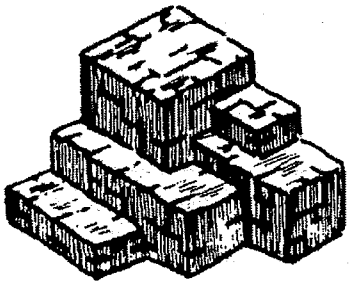
Year	Elevation (m)
1870	102.00
1890	102.25
1910	102.50
1930	102.75
1950	103.00

If the elevation continued to increase at the same rate, what was most likely the elevation of this area in 1990?

1) 103.25 m 2) 103.50 m
3) 103.75 m 4) 104.00 m

Base your answers to questions **16** through **19** on the diagram and table below.

Mineral Sample A



Mass = 210 grams

Mineral Density Table

Mineral	Density (g/cm^3)	Mineral	Density (g/cm^3)
Gypsum	2.3	Hornblende	3.2
Orthoclase	2.6	Chalcopyrite	4.2
Quartz	2.7	Pyrite	5.0
Calcite	2.7	Magnetite	5.2
Dolomite	2.9	Galena	7.5
Fluorite	3.2	Copper	8.9

16. A student measured the mass of a sample of quartz three times. The mass was the same the first and second times, but was less the third time. This decrease in mass could have occurred before the third measurement if the sample had been

    1) heated and expanded
    2) cooled and contracted
    3) soaked in water
    4) dropped and a piece was lost

17. Under identical conditions, several samples of the mineral pyrite are measured, and their densities are compared. The values obtained should show that

    1) rounded samples are more dense than rough samples
    2) large samples are more dense than small samples
    3) small samples are more dense than large samples
    4) all the pyrite samples have the same density

18. When a sample of the mineral calcite is heated. it expands, causing its density to be

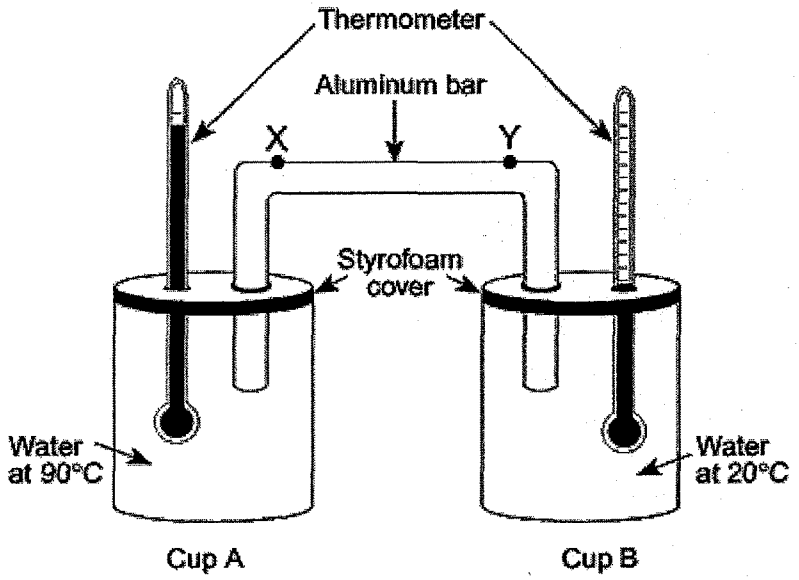
    1) less than 2.7 g/cm^3
    2) exactly 2.7 g/cm^3
    3) between 2.7 and 3.0 g/cm^3
    4) greater than 3.0 g/cm^3

19. If the volume of mineral sample *A* is 28 cubic centimeters, sample *A* is most likely

    1) copper
    2) galena
    3) chalcopyrite
    4) dolomite

____ 20. Base your answer to the following question on "the information about a laboratory procedure, diagram, and data table below.

Hot water at 90°C is poured into cup *A*. Cool water at 20°C is poured into cup *B*. Styrofoam covers are placed on the cups. An aluminum bar and a thermometer are placed through holes in each cover. Points *X* and *Y* are locations on the aluminum bar. The data table shows temperature readings taken every minute for 20 minutes.



	Temperature of Water (°C)	
Minute	Cup *A*	Cup *B*
0	90	20
1	88	20
2	86	20
3	85	21
4	83	21
5	82	22
6	81	22
7	80	22
8	79	22
9	78	23
10	77	23
11	76	23
12	75	23
13	74	23
14	73	23
15	72	24
16	71	24
17	70	24
18	69	24
19	68	25
20	67	25

The rate of temperature change for the water in cup *A* for the first 10 minutes was approximately

1) 0.77 C°/min 2) 1.3 C°/min 3) 7.7 C°/min 4) 13.0 C°/min