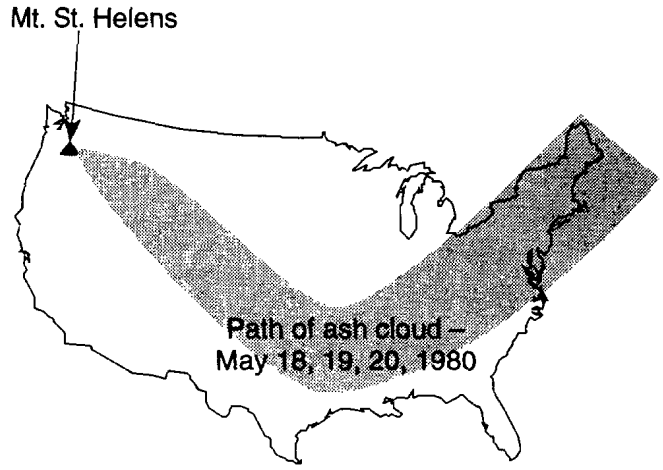
1st MP Quarterly Review

1. Base your answer to the following question on The map below shows the path of an ash cloud that resulted from the Mount St. Helens volcanic eruption. The map was developed from satellite photographs.



The path of the ash cloud was most probably determined by

A) hypothesis B) inference
C) theory D) observation

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

A) experiments
B) the senses
C) proportions
D) mathematical calculations

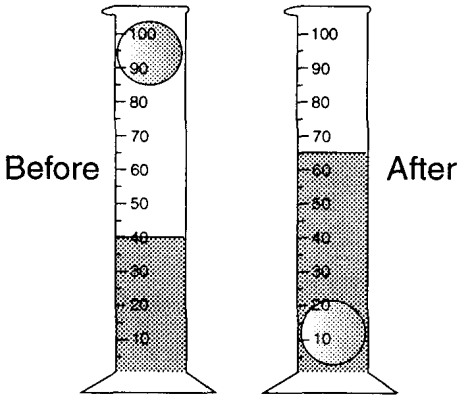
3. Which statement about an unidentified rock sample is most likely an inference?

A) The rock is composed of large crystals.
B) The rock has shiny, wavy mineral bands.
C) The rock is a metamorphic rock.
D) The rock has no visible fossils.

4. Which procedure is an example of classifying observed data?

A) grouping stars by brightness
B) graphing temperature versus time for a particular date
C) photographing the cloud cover for a location throughout 1 week
D) measuring the angle of *Polaris* from two different locations

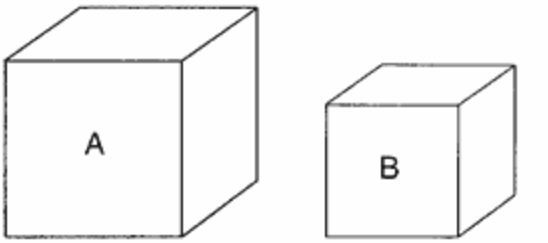
5. The sphere was dropped into water in a graduated cylinder as shown below.



What is the volume of the sphere?

A) 15 mL B) 25 mL
C) 40 mL D) 65 mL

Base your answers to questions **6** and **7** on the diagrams below, which represent two different solid, uniform materials cut into cubes *A* and *B*.



(Not drawn to scale)

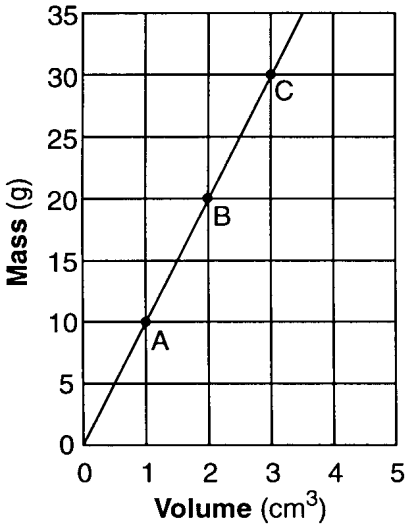
6. What is the mass of cube *B*?

A) 9 g B) 27 g C) 3 g D) 81 g

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

A) decrease B) increase
C) remain the same

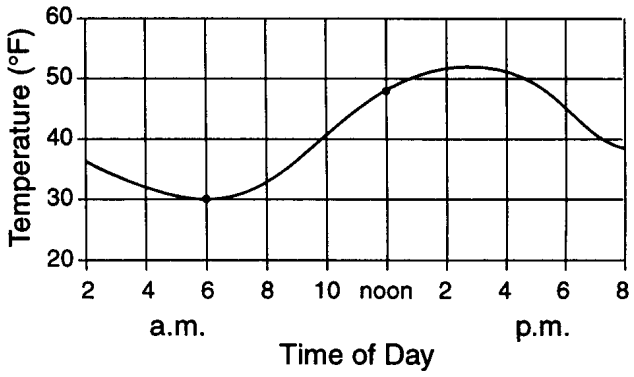
8. The graph below shows the relationship between mass and volume for three samples, *A*, *B*, and *C*, of a given material.



What is the density of this material?

A) 1.0 g/cm^3 B) 5.0 g/cm^3
C) 10.0 g/cm^3 D) 20.0 g/cm^3

9. The graph below shows temperature readings for a day in April.



The average rate of temperature change, in Fahrenheit degrees per hour, between 6 a.m. and noon was

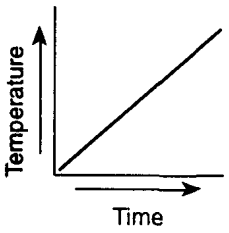
A) 6º/hr B) 8º/hr
C) 3º/hr D) 18º/hr

10. Ocean tides are best described as

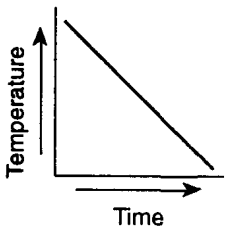
A) unpredictable and cyclic
B) unpredictable and noncyclic
C) predictable and cyclic
D) predictable and noncyclic

11. Which graph most likely illustrates a cyclic change?

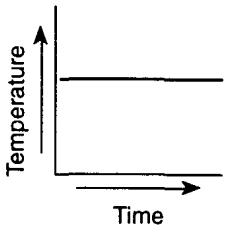
A)



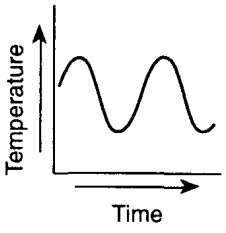
B)



C)



D)



12. The altitude of the ozone layer near the South Pole is 20 kilometers above sea level. Which temperature zone of the atmosphere contains this ozone layer?

A) troposphere B) stratosphere
C) mesosphere D) thermosphere

13. An air temperature of 95ºC most often exists in which layer of the atmosphere?

A) troposphere B) stratosphere
C) mesosphere D) thermosphere

14. As the altitude increases within Earth's stratosphere, air temperature generally

A) decreases, only
B) increases, only
C) decreases, then increases
D) increases, then decreases

15. As altitude within the troposphere increases, the amount of water vapor generally

A) decreases, only
B) increases, only
C) remains the same
D) decreases, then increases

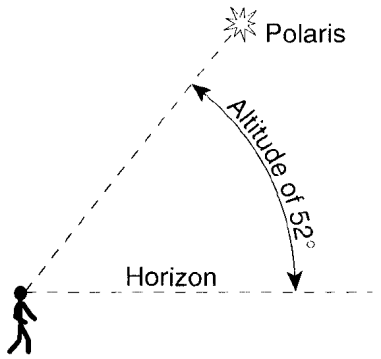
16. At which New York State location would an observer measure the highest altitude of *Polaris*?

A) New York City B) Slide Mountain
C) Niagara Falls D) Plattsburgh

17. At which location is the altitude of *Polaris* approximately 42°?

A) Niagara Falls B) Elmira
C) Watertown D) Massena

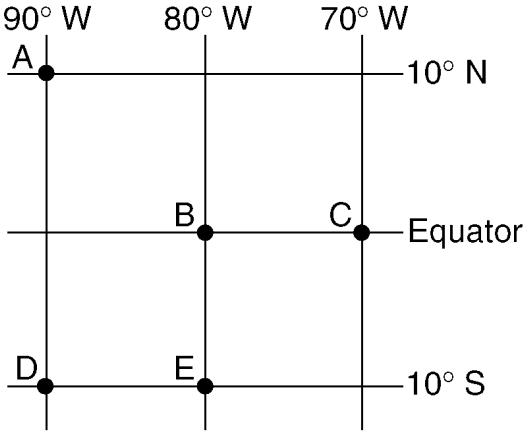
18. The diagram below shows an observer on Earth viewing the star *Polaris*.



What is the observer's latitude?

A) 38° N B) 38° S
C) 52° N D) 52° S

Base your answers to questions **19** and **20** on the map below, which shows the latitude and longitude of five observers, *A, B, C, D,* and *E,* on Earth.



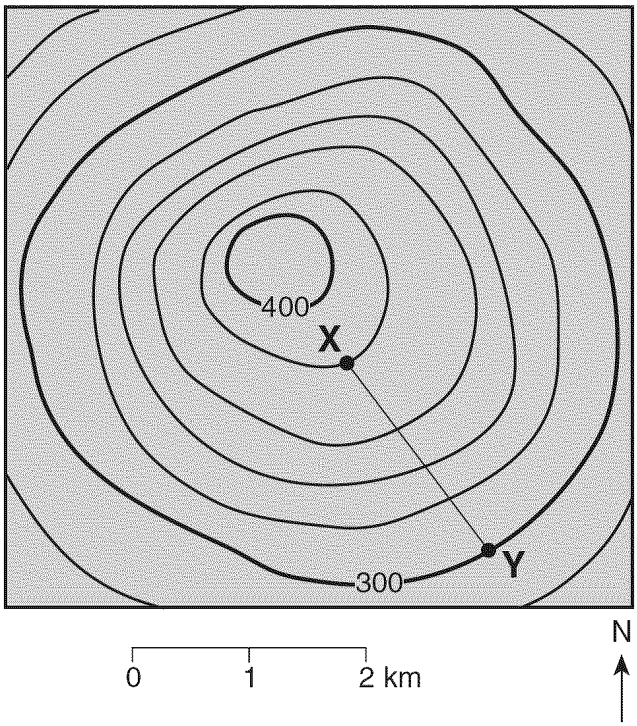
19. Which two observers would be experiencing the same apparent solar time?

A) *A* and *C* B) *B* and *C*
C) *B* and *E* D) *D* and *E*

20. What is the altitude of *Polaris* (the North Star) above the northern horizon for observer *A*?

A) 0° B) 10° C) 80° D) 90°

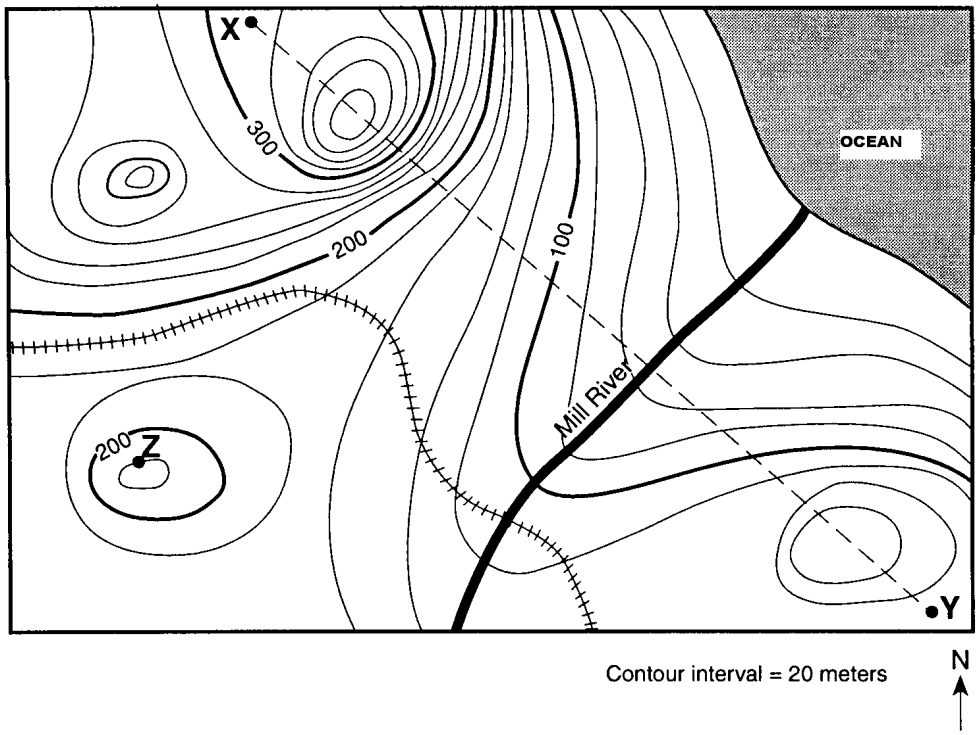
21. The topographic map below shows a hill. Points *X* and *Y* represent locations on the hill's surface. Elevations are shown in meters.



What is the gradient between points *X* and *Y*?

A) 40 m/km B) 80 m/km
C) 100 m/km D) 120 m/km

Base your answers to questions **22** and **23** on the topographic map below. Points *X*, *Y*, and *Z* are locations on the map. Elevations are expressed in meters.



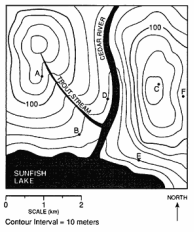
22. What is the elevation of point *Z*?

A) 190 m B) 220 m C) 240 m D) 250 m

23. Mill River generally flows toward the

A) southeast B) southwest C) northeast D) northwest

24. Base your answer to the following question on the contour map below. Points *A* through *F* represent locations on the map.

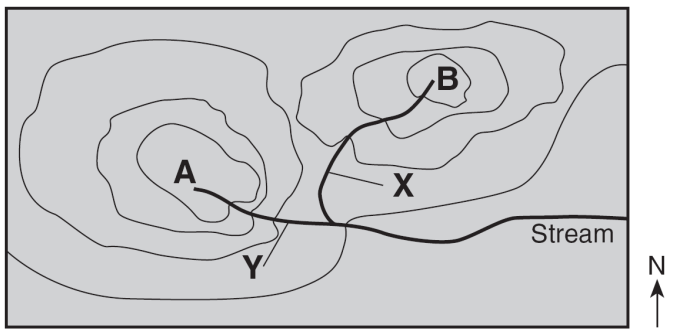


Which diagram best represents the topographic profile from location *A* to location *F*?

A)  B) 

C)  D) 

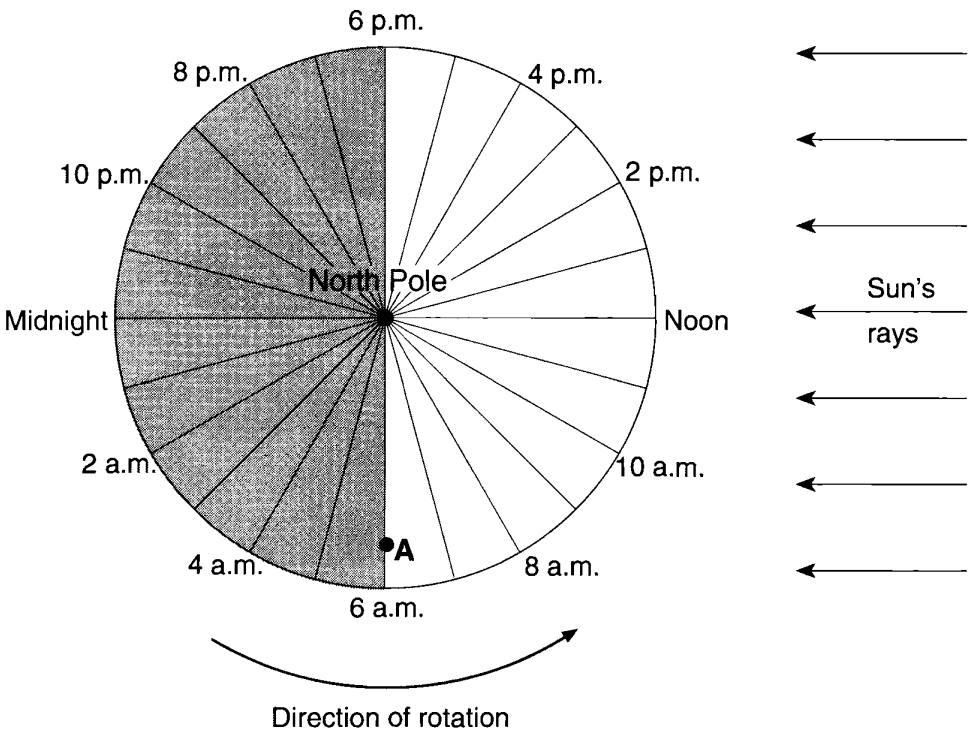
25. The topographic map below shows two hills labeled *A* and *B*. The tributary streams labeled *X* and *Y* have the same volume of water.



Which statement is best supported by the map?

A) Hill *A* is higher than hill *B*.
B) Hill *B* is higher than hill *A*.
C) Stream *X* flows faster than stream *Y*.
D) Stream *Y* flows faster than stream *X*.

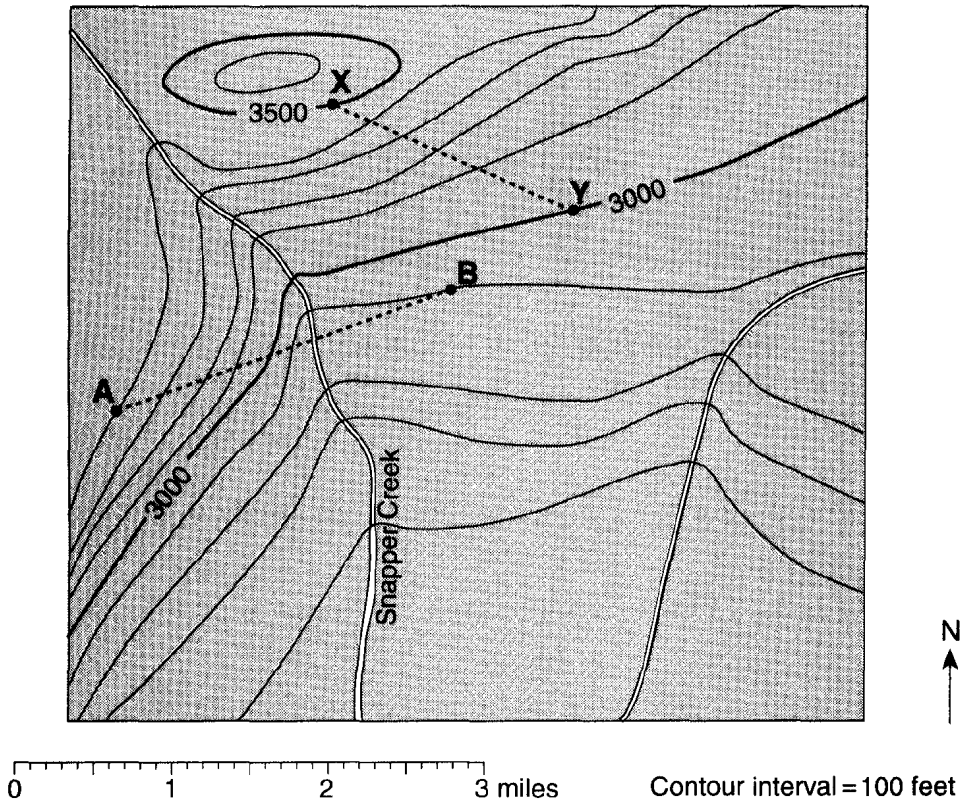
Base your answers to questions **26** and **27** on the diagram below, which represents a north polar view of Earth on a specific day of the year. Solar times at selected longitude lines are shown. Letter *A* represents a location on Earth's surface.



26. State the altitude of *Polaris* as seen by an observer at the North Pole.

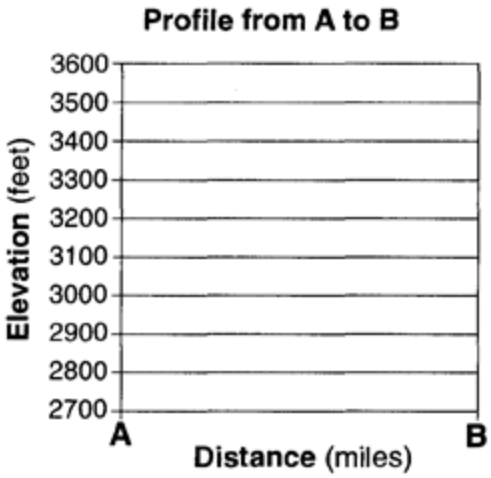
27. How many degrees apart are the longitude lines shown in the diagram?

Base your answers to questions **28** and **29** on on the topographic map below. Points A, B, X, and Y are locations on Earth's surface.

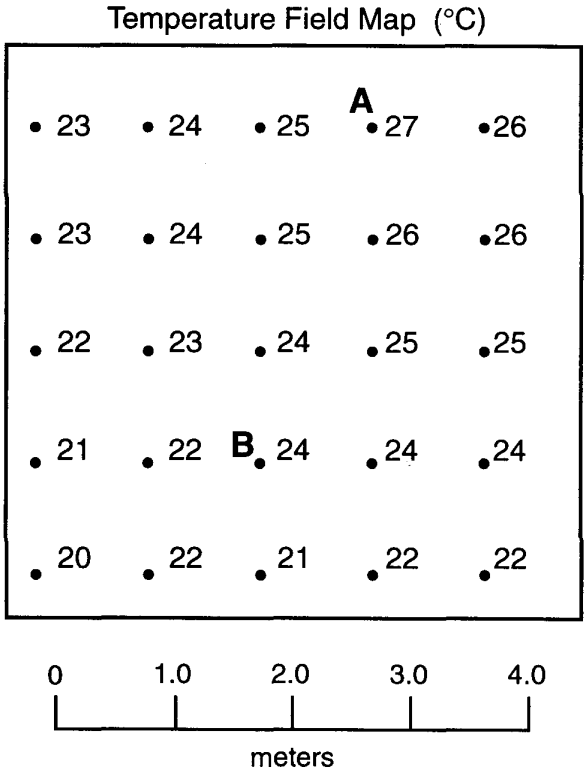


28. Calculate the gradient between points X and Y. Units must be included in your answer.

29. On the grid below, construct a topographic profile of the land surface along line AB by plotting an **X** for the the elevation of each contour line that crosses line AB. Connect the **X**s with a smooth, curved line to complete the profile.



30. Base your answer to the following question on the temperature field map below. the map shows 25 measurements (in °C) that were made in a temperature field and recorded as shown. The dots represent the exact location of the measurements. ***A*** and ***B*** are locations within the field.



On the temperature field map above, draw threee isotherms: the 23°C isotherm, the 24°C isotherm, and the 25°C isotherm.