REGENTS REVIEW PACKETS

Name _____ Packet # 1 Score _____

Partner _____

Partner _____

Partner _____

Staple your free response to the back of this answer sheet

1) _____	21) _____	41) _____	61) _____
2) _____	22) _____	42) _____	62) _____
3) _____	23) _____	43) _____	63) _____
4) _____	24) _____	44) _____	64) _____
5) _____	25) _____	45) _____	65) _____
6) _____	26) _____	46) _____	66) _____
7) _____	27) _____	47) _____	67) _____
8) _____	28) _____	48) _____	68) _____
9) _____	29) _____	49) _____	69) _____
10) _____	30) _____	50) _____	70) _____
11) _____	31) _____	51) _____	71) _____
12) _____	32) _____	52) _____	72) _____
13) _____	33) _____	53) _____	73) _____
14) _____	34) _____	54) _____	74) _____
15) _____	35) _____	55) _____	75) _____
16) _____	36) _____	56) _____	
17) _____	37) _____	57) _____	
18) _____	38) _____	58) _____	
19) _____	39) _____	59) _____	
20) _____	40) _____	60) _____	

1. In the classroom during a visual inspection of a rock, a student recorded four statements about the rock. Which statement about the rock is an observation?

   1) The rock formed deep in the Earth's interior.
   2) The rock cooled very rapidly.
   3) The rock dates from the Precambrian Era.
   4) The rock is black and shiny.

2. A group of students observed and measured various characteristics of a stream for one day. Which statement about the stream is most likely an inference?

   1) The stream water is dark brown.
   2) The water level of the stream will rise after the next rainfall.
   3) The velocity of the stream is greatest near the outside of a meander.
   4) The stream's depth is different at various distances from the streambank.

3. While on a field trip to a large lake in New York State, an observer recorded four statements about this lake. Which of these statements is most likely an inference?

   1) The lake was formed by glacial action.
   2) The water is clear enough to see the bottom of the lake.
   3) A log is floating in the lake.
   4) The surface temperature of the lake is 18.5°C.

4. Which statement best illustrates a classification system?

   1) A glacier melts at the rate of one meter per year.
   2) Ocean depths are measured by using sonar.
   3) Snowfall predictions for winter storms vary.
   4) Stars are grouped according to their color.

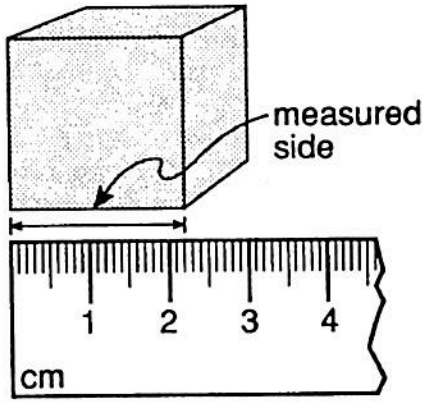
5. A quantity of water is frozen solid and then heated from 0°C to 10°C. Which statement best describes the properties of the water during this time?

   1) Mass and volume change.
   2) Volume and density change.
   3) Mass changes but volume remains constant.
   4) Volume changes but density remains constant.

6. Which group of substances is arranged in order of *decreasing* specific heat values?

   1) iron, granite, basalt
   2) copper, lead, iron
   3) dry air, water vapor, ice
   4) liquid water, ice, water vapor

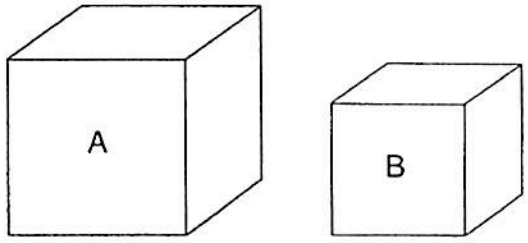
7. Base your answer to the following question on the image provided below.



If each side of the cube shown above has the same length as the measured side, what is the approximate volume of the cube?

1) 2.20 cm^3
2) 4.84 cm^3
3) 6.60 cm^3
4) 10.65 cm^3

Base your answers to questions **8** and **9** 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)

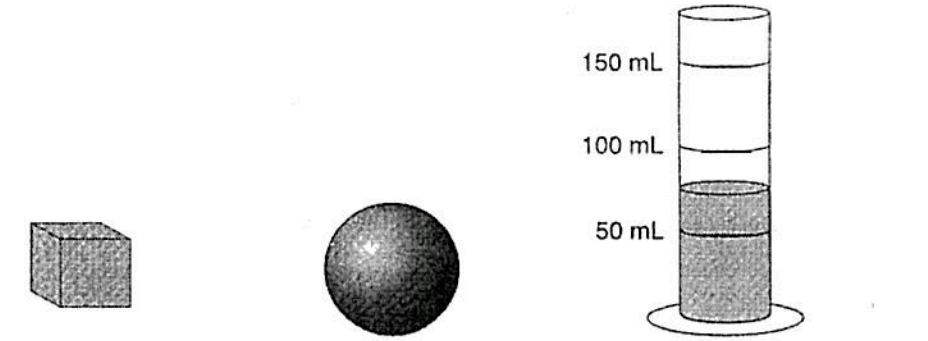
8. If a parcel of air is heated, its density will

   1) decrease
   2) increase
   3) remain the same

9. 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

Base your answers to questions **10** and **11** on the diagrams below, and your knowledge of Earth science. The diagrams represent five substances, *A* through *E*, at the same temperature. Some mass, volume, and density values are indicated for each substance. Substance *C* is a liquid in a graduated cylinder. [Note that 1 cubic centimeter = 1 milliliter. Objects are not drawn to scale.]



Mass = 8.0 g
Volume = 2.0 cm^3
Density = 4.0 g/cm^3

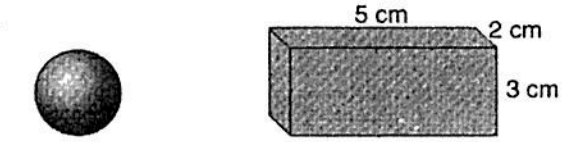
A

Mass = 9.0 g
Volume = 5.0 cm^3
Density = ? g/cm^3

B

Mass of liquid = ? g
Volume of liquid = ? mL
Density of liquid = 1.2 g/mL

C



Mass = 0.8 g
Volume = ? cm^3
Density = 0.4 g/cm^3

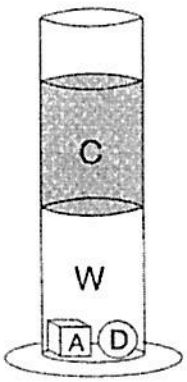
D

Mass = 54.0 g
Volume = ? cm^3
Density = ? g/cm^3

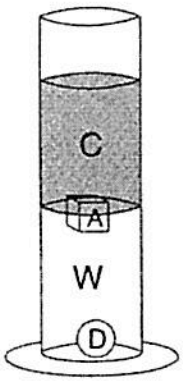
E

10. Water (*W*) was added to the graduated cylinder containing liquid *C*. Objects *A* and *D* were then dropped into the cylinder. Which diagram most accurately shows the resulting arrangement of these substances?

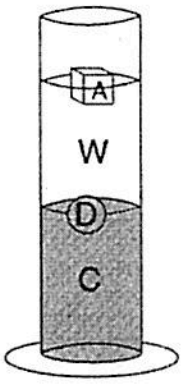
1)



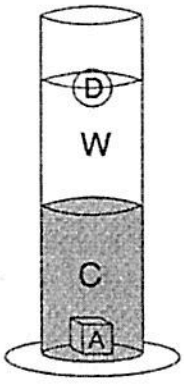
2)



3)



4)



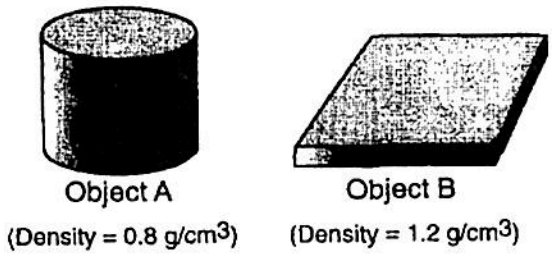
11. Which two substances could be made of the same material?

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

12. Which factor can be predicted most accurately from day to day?

1) chance of precipitation
2) direction of the wind
3) time of an earthquake occurring
4) altitude of the Sun at noon

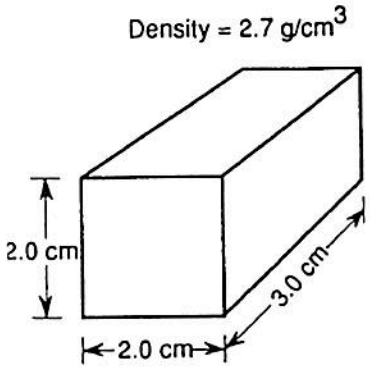
13. The diagrams below represent two solid objects *A* and *B*. with different densities.



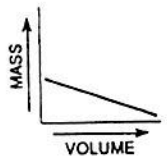
What will happen when the objects are placed in a container of water (water temperature = 4°C)?

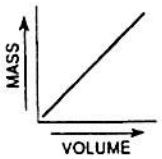
1) Both objects will sink.
2) Both objects will float.
3) Object *A* will float and object *B* will sink.
4) Object *B* will float and object *A* will sink.

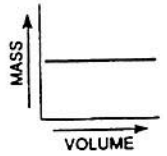
14. Base your answer to the following question on the diagram below, which represents a solid material of uniform composition.

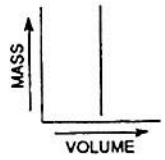


Which graph best represents the relationship between the mass and volume of various-sized pieces of this material?

1)


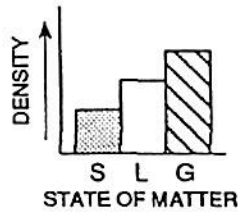
2)


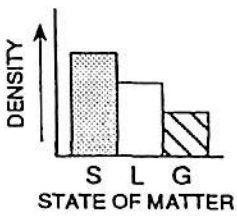
3)


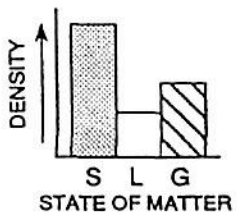
4)


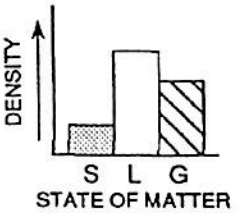
15. Which graph best represents the relationship between the density of a substance and its state of matter (phase) for most earth materials, *excluding* water?

[Key: *S* = solid, *L* = liquid, *G* = gas]

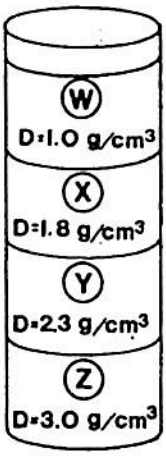
1)


2)


3)


4)


16. The diagram at the right represents a cylinder which contains four different liquids, *W*, *X*, *Y*, and *Z*, each with a different density (*D*) as indicated. A piece of solid quartz having a density of 2.7 g/cm^3 is placed on the surface of liquid *W*. When the quartz is released, it will pass through



1) *W*, but not *X*, *Y*, or *Z*
2) *W* and *X*, but not *Y* or *Z*
3) *W*, *X*, and *Y*, but not *Z*
4) *W*, *X*, *Y*, and *Z*

17. An observer recorded the times of three successive high tides at one Earth location as:

- 7:12 a.m.
- 7:38 p.m.
- 8:04 a.m.

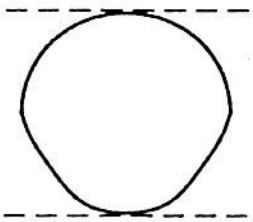
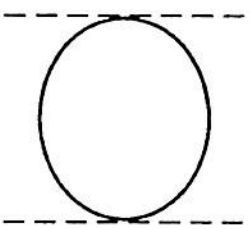
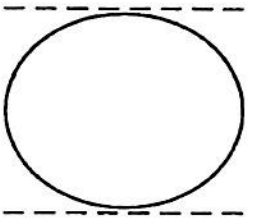
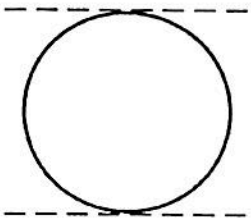
What was the time of the next high tide?

1) 8:12 p.m.
2) 8:30 p.m.
3) 8:38 p.m.
4) 9:04 p.m.

18. Future changes in the environment can best be predicted from data that are

1) highly variable and collected over short periods of time
2) highly variable and collected over long periods of time
3) cyclic and collected over short periods of time
4) cyclic and collected over long periods of time

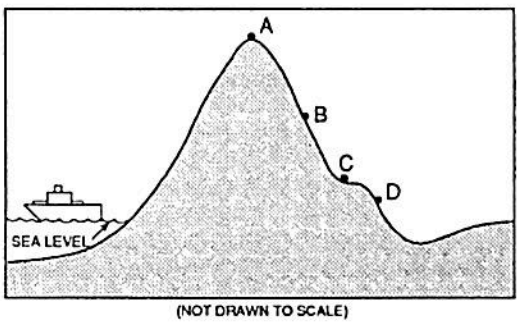
19. Which diagram most accurately shows the cross-sectional shape of the Earth?

1) 
2) 
3) 
4) 

20. Compared to the weight of a person at the North Pole, the weight of the same person at the Equator would be

1) slightly less, because the person is farther from the center of Earth
2) slightly less, because the person is closer to the center of Earth
3) slightly more, because the person is farther from the center of Earth
4) slightly more, because the person is closer to the center of Earth

21. In the diagram below, letters *A* through *D* represent the locations of four observers on the Earth's surface. Each observer has the same mass.



(NOT DRAWN TO SCALE)

The gravitational force is strongest between the center of the Earth and the observer at location

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

22. The polar circumference of the Earth is 40,008 kilometers. What is the equatorial circumference?

1) 12,740 km 2) 25,000 km
3) 40,008 km 4) 40,076 km

23. The best evidence of the Earth's nearly spherical shape is obtained through

1) telescopic observations of other planets
2) photographs of the Earth from an orbiting satellite
3) observations of the Sun's altitude made during the day
4) observations of the Moon made during lunar eclipses

24. In which atmospheric temperature zone does most precipitation occur?

1) thermosphere 2) mesosphere
3) stratosphere 4) troposphere

25. At what approximate altitude in the atmosphere can stratospheric ozone be found?

1) 10 km 2) 30 km
3) 70 km 4) 100 km

26. In which two Earth regions is oxygen the second most abundant element by volume?

1) crust and hydrosphere
2) hydrosphere and troposphere
3) troposphere and core
4) core and crust

27. In which two temperature zones of the atmosphere does the temperature increase with increasing altitude?

1) troposphere and stratosphere
2) troposphere and mesosphere
3) stratosphere and thermosphere
4) mesosphere and thermosphere

28. Earth's troposphere, hydrosphere, and lithosphere contain relatively large amounts of which element?

1) iron 2) oxygen
3) hydrogen 4) potassium

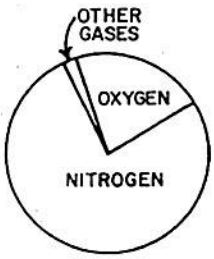
29. Which New York State city is located at 42°39' N 73°45' W?

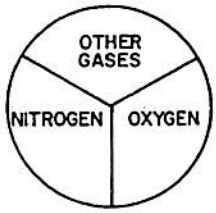
1) Buffalo 2) Albany
3) Ithaca 4) Plattsburgh

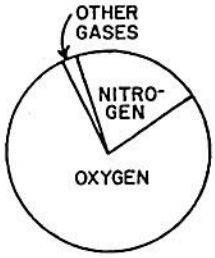
30. What do the tropopause, stratopause, and mesopause all have in common?

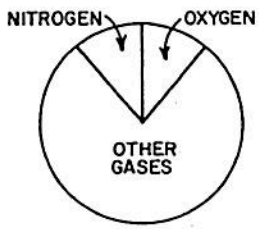
1) Each is a point of maximum temperature in its layer of the atmosphere.
2) Each is an interface between two layers of the atmosphere.
3) Each is a region of increasing pressure within the atmosphere.
4) Each is a zone of decreasing water vapor content within the atmosphere.

31. Which circle graph best represents the volume of gases in the troposphere?

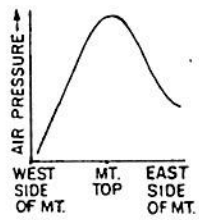
1) 

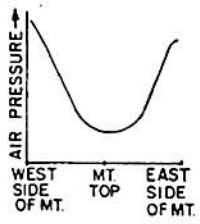
2) 

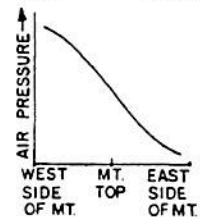
3) 

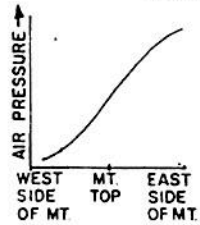
4) 

32. An observer recorded the barometric pressure while traveling up the west side of a mountain and down the other side. Which graph best represents the probable air pressure changes that were observed?

1) 

2) 

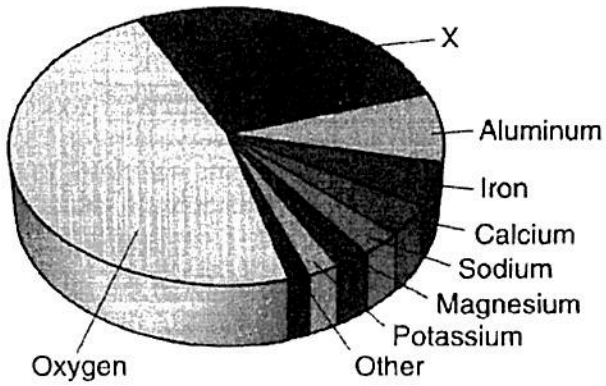
3) 

4) 

33. What time is it in Greenwich, England (at 0° longitude), when it is noon in Massena, New York?

1) 7 a.m.
2) noon
3) 5 p.m.
4) 10 p.m.

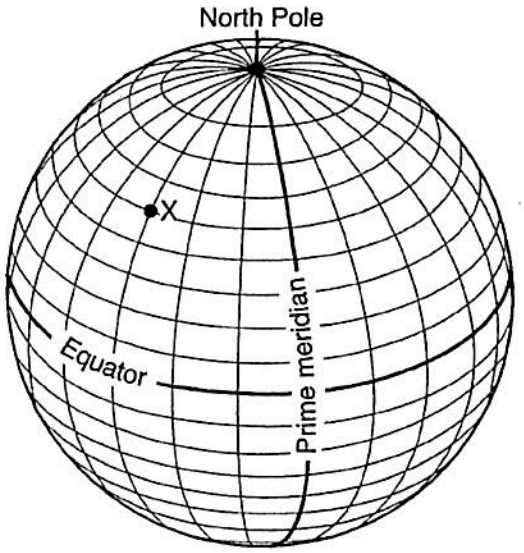
34. The pie graph below shows the elements comprising Earth's crust in percent by mass.



Which element is represented by the letter *X*?

1) silicon
2) lead
3) nitrogen
4) hydrogen

35. The diagram below shows latitude measurements every 10 degrees and longitude measurements every 15 degrees.



What is the latitude and longitude of point *X*?

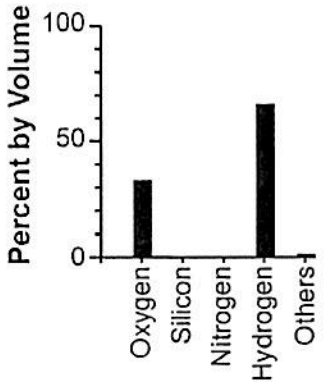
1) 40° S 45° E
2) 50° N 45° W
3) 60° S 30° W
4) 75° N 30° E

36. What is the approximate location of the Canary Islands hot spot?

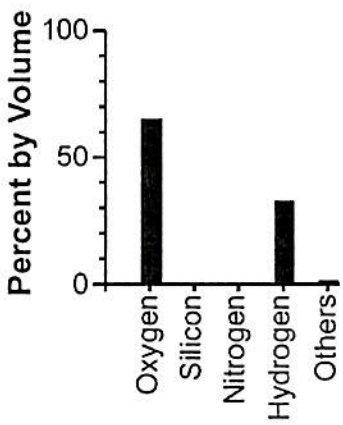
1) 32° S 18° W
2) 32° S 18° E
3) 32° N 18° W
4) 32° N 18° E

37. Which bar graph best shows the percent by volume of the elements that make up Earth's hydrosphere?

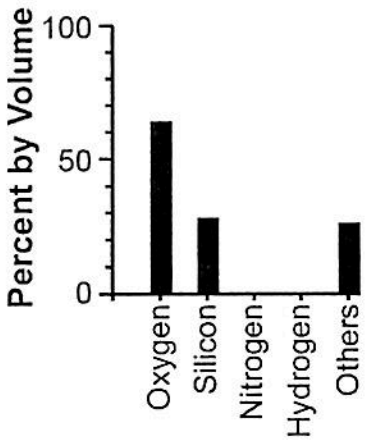
1)



2)



3)



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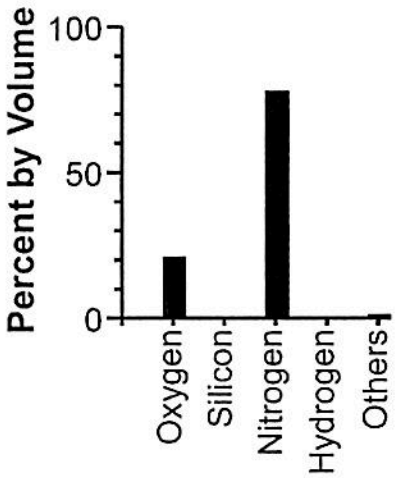
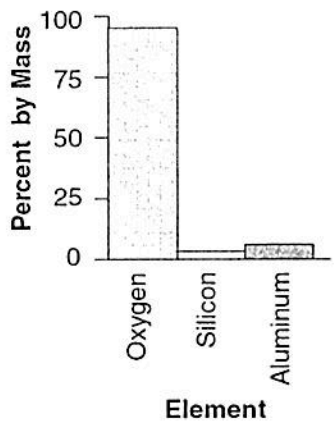
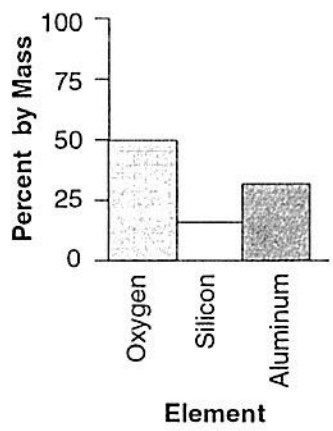


38. Which graph correctly represents the three most abundant elements, by mass, in Earth's crust?

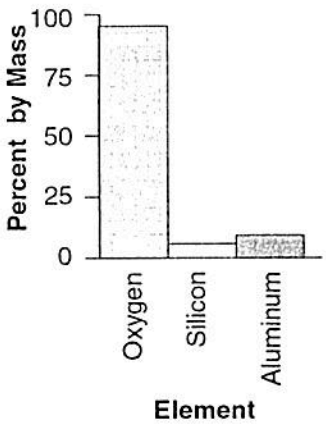
1)



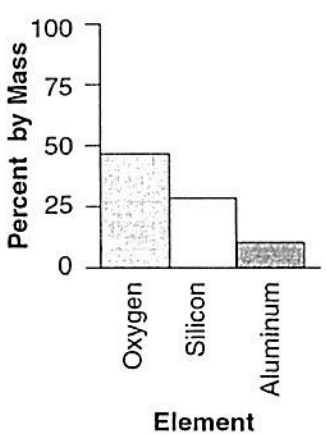
2)



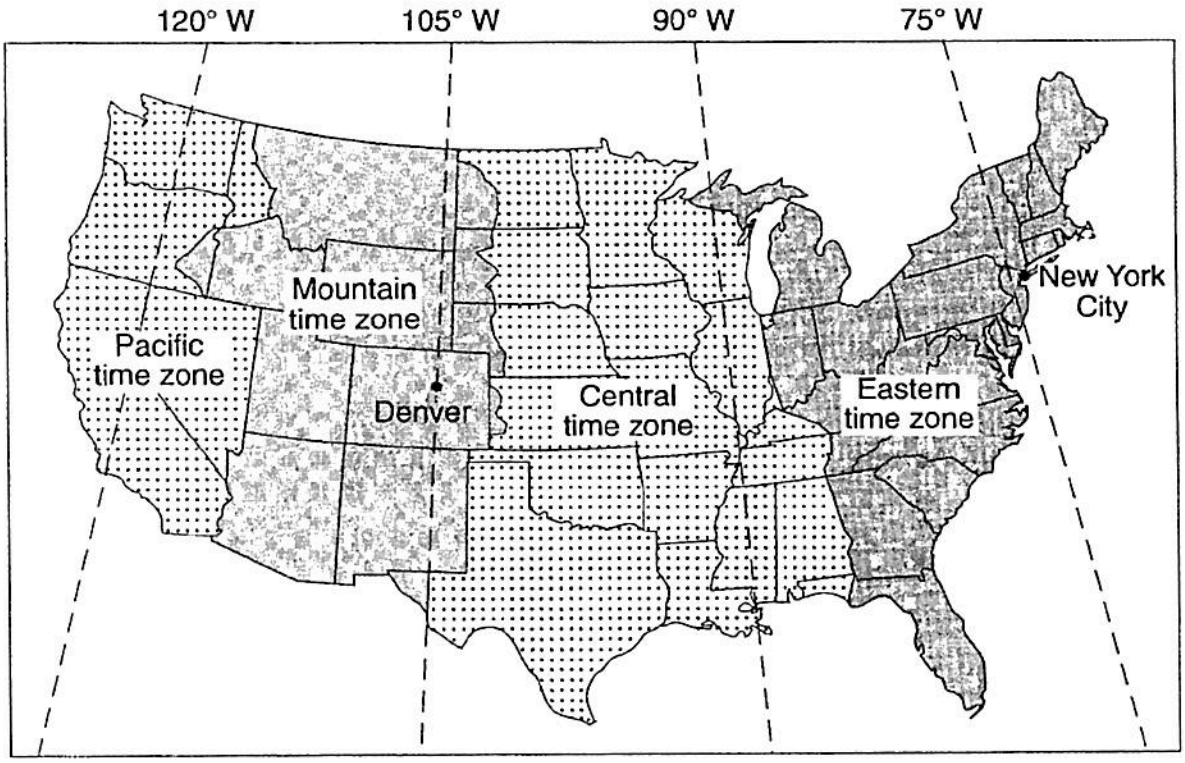
3)



4)



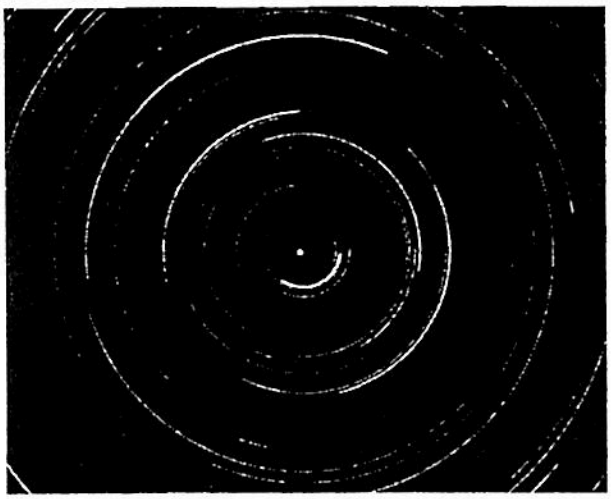
39. The map below shows four major time zones of the United States. The dashed lines represent meridians of longitude. The locations of New York City and Denver are shown.



What is the time in New York City when it is noon in Denver?

1) 10 a.m. 2) 2 p.m. 3) 3 p.m. 4) noon

Base your answers to questions **40** and **41** on the time-exposure photograph shown below. The photograph was taken by aiming a camera at a portion of the night sky above a New York State location and leaving the camera's shutter open for a period of time to record star trails.



40. During the time exposure of the photograph, the stars appear to have moved through an arc of 120°. How many hours did this time exposure take?

1) 5 h 2) 8 h 3) 12 h 4) 15 h

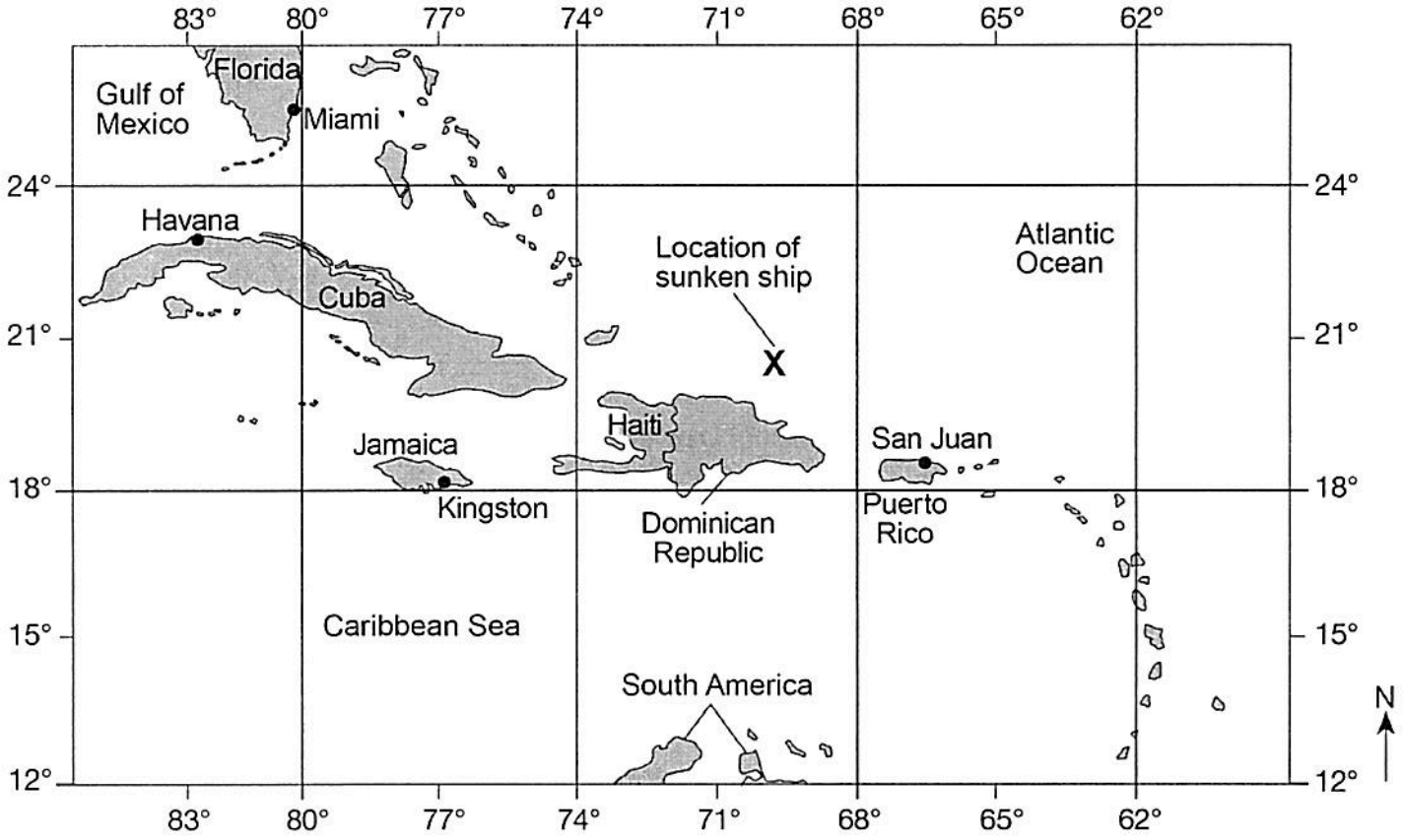
41. Which celestial object is shown in the photograph near the center of the star trails?

1) the Sun 2) the Moon 3) *Sirius* 4) *Polaris*

Base your answers to questions **42** and **43** on the passage and map below. The map shows sections of the Atlantic Ocean, the Caribbean Sea, and the Gulf of Mexico.

Shipwreck

In 1641, the crew of the ship *Concepcion* used the Sun and stars for navigation. The crew thought that the ship was just north of Puerto Rico, but ocean currents had carried them off course. The ship hit a coral reef and sank off the coast of the Dominican Republic. The **X**on the map marks the location of the sunken ship.



42. At which map location does *Polaris* appear the highest in the nighttime sky?

1) Miami, Florida 2) Kingston, Jamaica
3) Havana, Cuba 4) San Juan, Puerto Rico

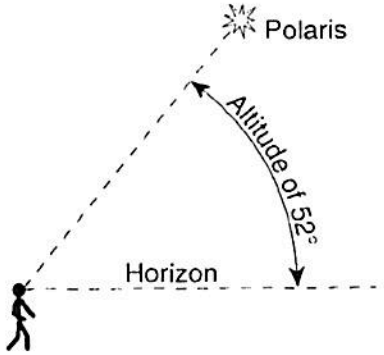
43. What is the approximate latitude and longitude of the sunken ship?

1) 20.5° N 70° E 2) 20.5° N 70° W 3) 20.5° S 70° E 4) 20.5° S 70° W

44. At which location will the highest altitude of the star *Polaris* be observed?

1) Equator
2) Tropic of Cancer
3) Arctic Circle
4) central New York State

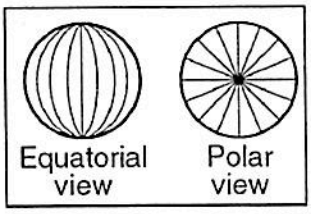
45. The diagram below shows an observer on Earth viewing the star *Polaris*.

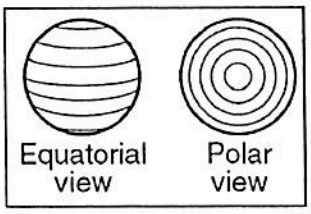


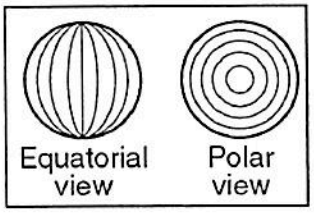
What is the observer's latitude?

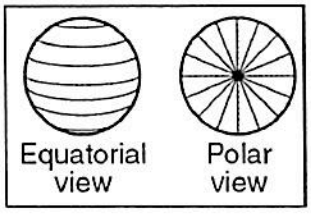
1) 38° N 2) 38° S 3) 52° N 4) 52° S

46. The lines on which set of views best represent Earth's latitude system?

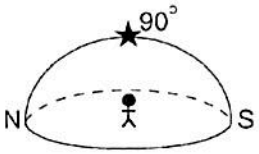
1)


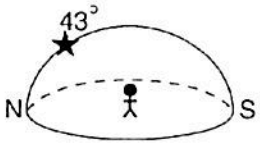
2)


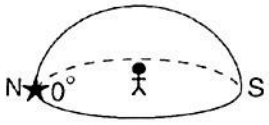
3)


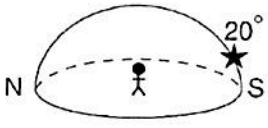
4)


47. Which diagram represents the approximate altitude of *Polaris* as seen by an observer located Syracuse, New York?

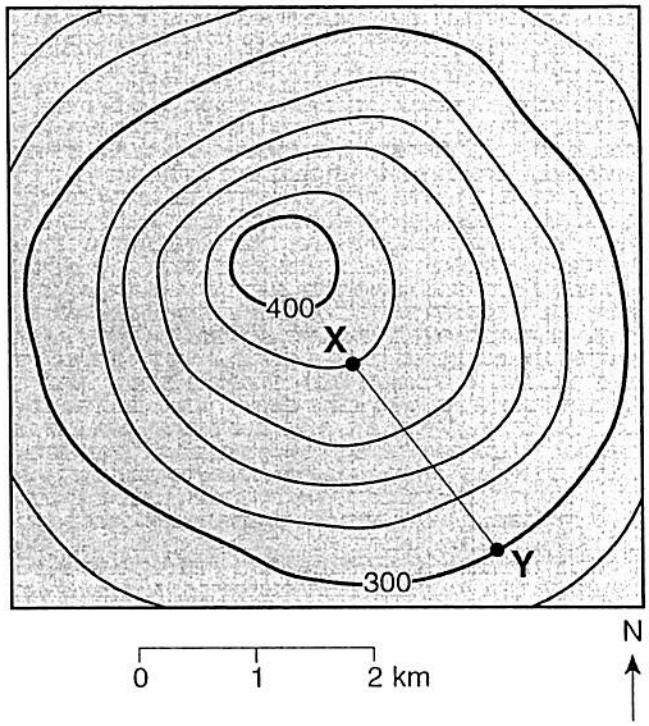
1)


2)


3)


4)


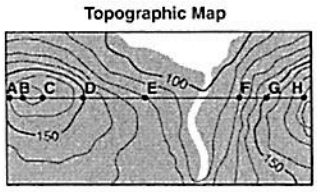
48. The topographic map below shows a hill. Points *X* and *Y* represent locations on the hill's surface. Elevations are shown in meters.

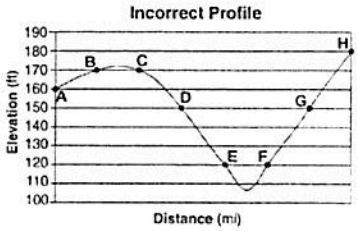


What is the gradient between points *X* and *Y*?

1) 40 m/km 2) 80 m/km
3) 100 m/km 4) 120 m/km

49. A topographic map and an *incorrectly* constructed profile from point *A* to point *H* on the map are shown below.





What mistake was made in the construction of this profile?

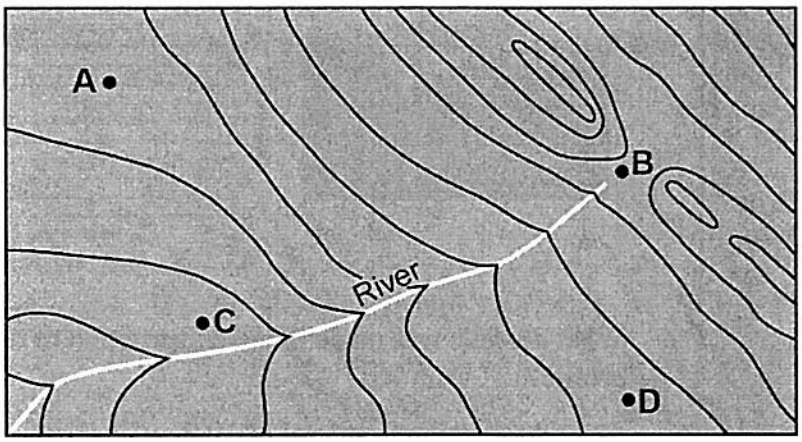
1) using a contour interval of 10 feet
2) plotting points *A* through *H* the same distance apart horizontally
3) drawing a curved line instead of a straight line from point *B* to point C
4) increasing the elevation from point *F* to point *H*

50. Base your answer to the following question on the isoline map below, which shows the average yearly precipitation, in inches, across New York State.

Approximately how many inches of average yearly precipitation does Rochester, New York, receive?

1) 26 2) 30 3) 38 4) 42

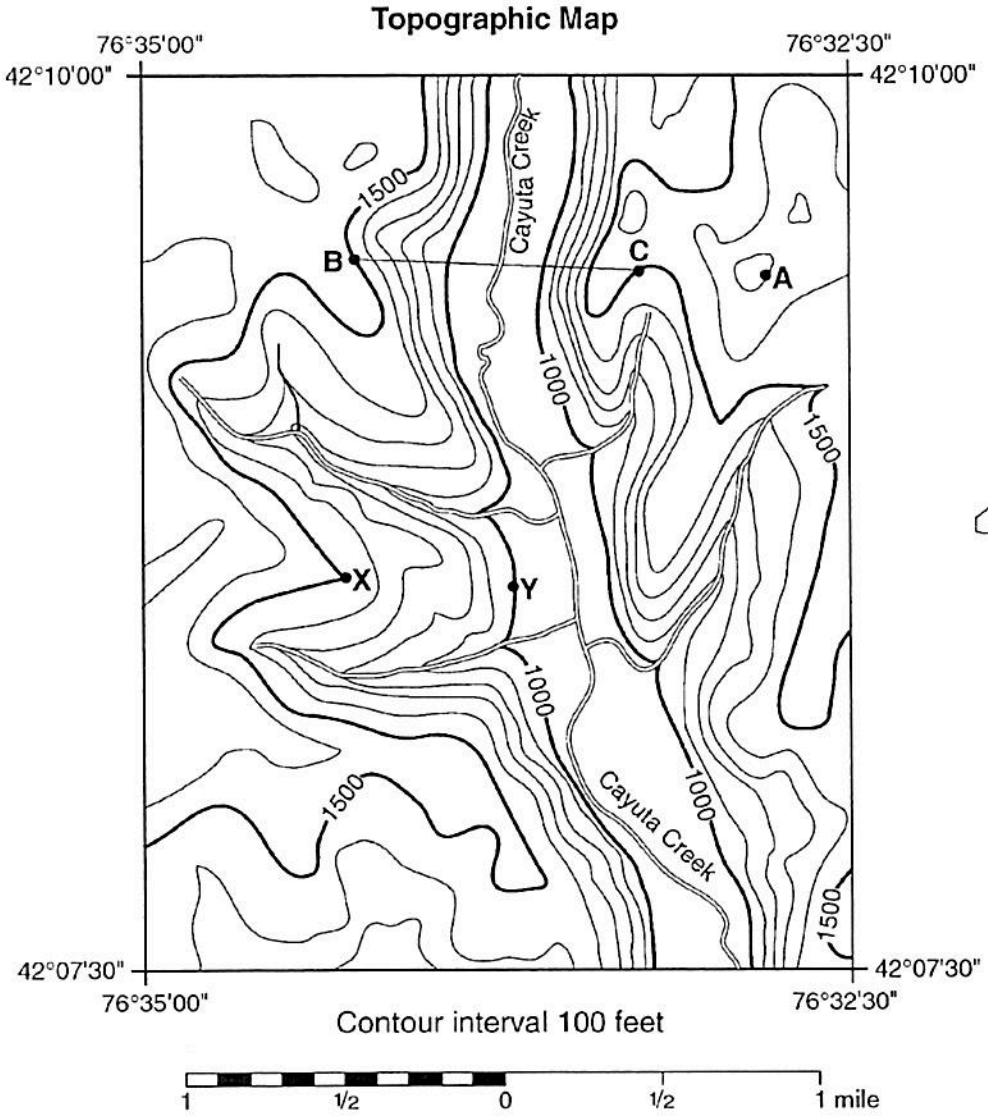
51. Four locations, *A, B,* C, and D, are represented on the topographic map below.



Which lettered location has the highest elevation?

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

Base your answers to questions **52** and **53** on the maps below. Points *A, B, C, X,* and *Y* are locations on the topographic map. The small map identifies the New York State region shown in the topographic map.



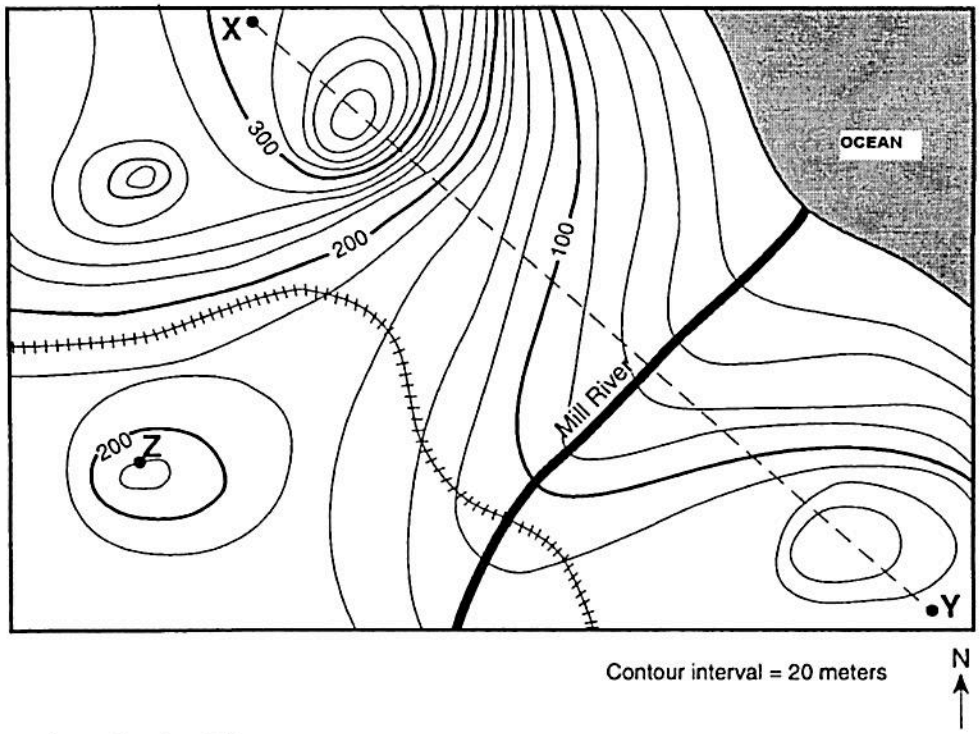
52. What is the approximate gradient between point *X* and point *Y*?

1) 100 ft/mi 2) 250 ft/mi 3) 500 ft/mi 4) 1,000 ft/mi

53. What is the elevation of point *A* on the topographic map?

1) 1,700 ft 2) 1,650 ft 3) 1,600 ft 4) 1,550 ft

Base your answers to questions **54** and **55** on the topographic map below. Points *X*, *Y*, and *Z* are locations on the map. Elevations are expressed in meters.



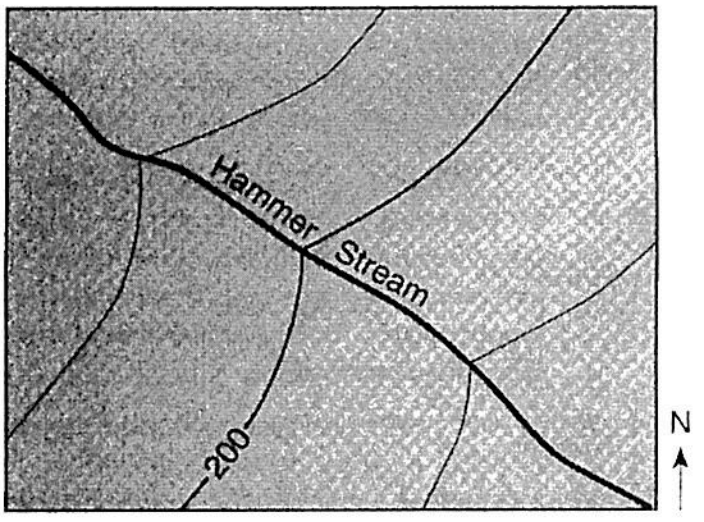
54. What is the elevation of point *Z*?

1) 190 m 2) 220 m 3) 240 m 4) 250 m

55. Mill River generally flows toward the

1) southeast 2) southwest 3) northeast 4) northwest

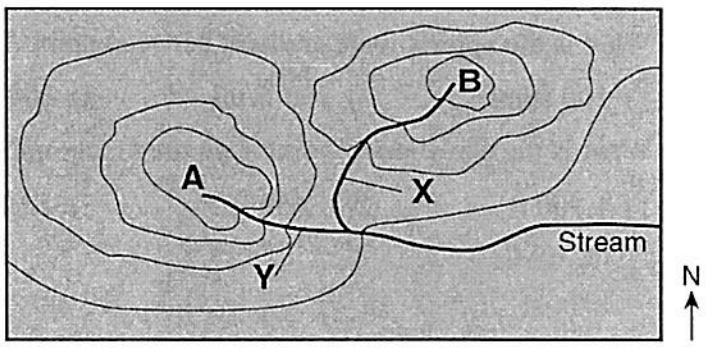
56. The topographic map below shows part of a stream.



In which general direction is the stream flowing?

1) northeast 2) northwest
3) southeast 4) southwest

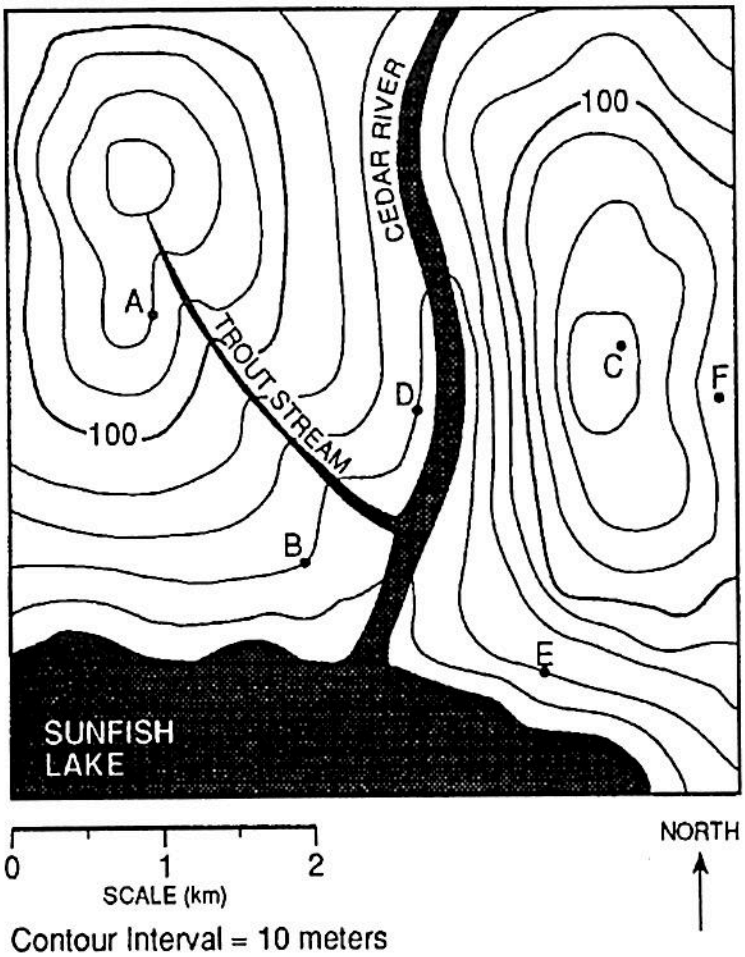
57. The topographic map below shows two hills labeled *A* and *B*. The tributary streams labeled *X* and *Y* have the same volume of water.



Which statement is best supported by the map?

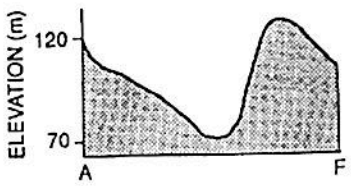
1) Hill *A* is higher than hill *B*.
2) Hill *B* is higher than hill *A*.
3) Stream *X* flows faster than stream *Y*.
4) Stream *Y* flows faster than stream *X*.

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

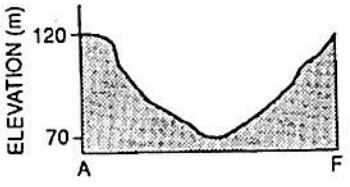


Which diagram best represents the topographic profile from location A to location F?

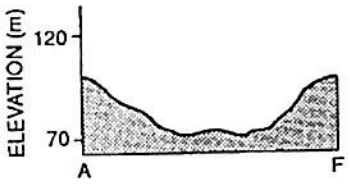
1)



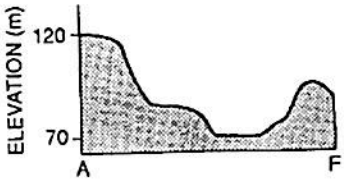
2)



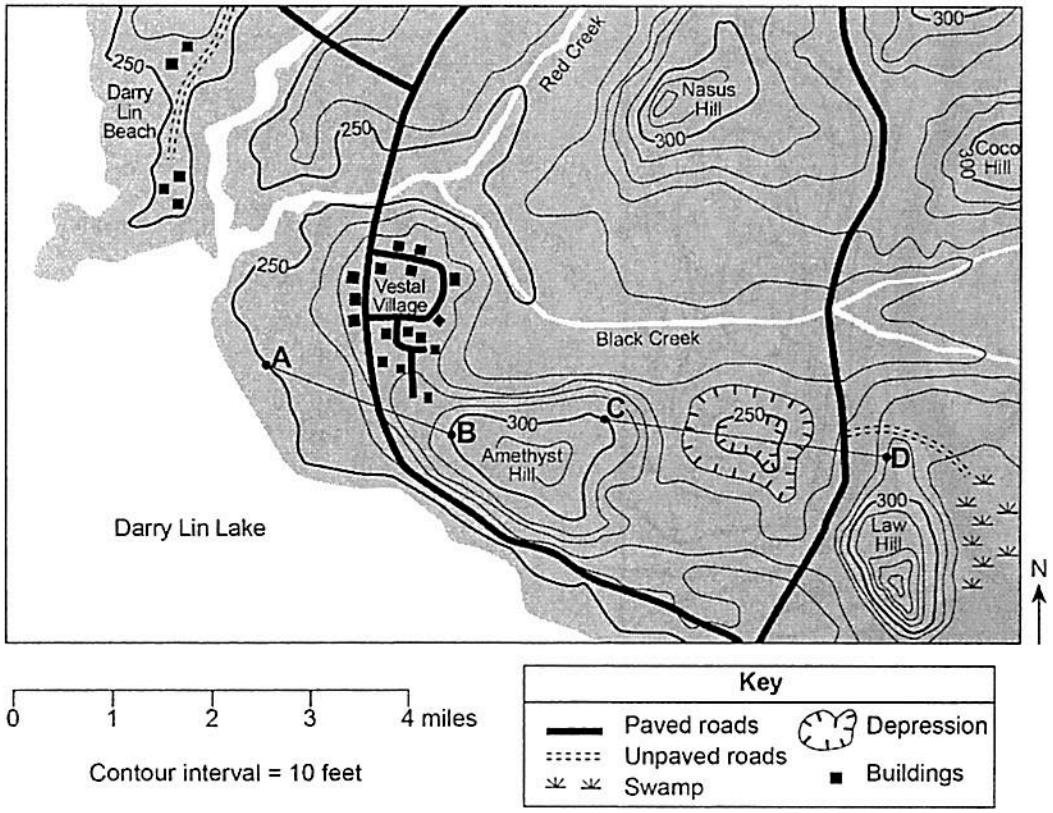
3)



4)

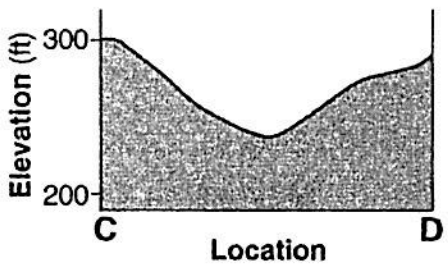


Base your answers to questions **59** through **62** on the topographic map below and on your knowledge of Earth Science. Points *A*, *B*, *C*, and *D* represent locations on the surface of Earth. Elevations are measured in feet.

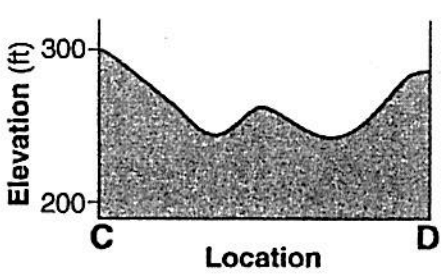


59. Which cross section represents an accurate profile of the landscape between points *C* and *D*?

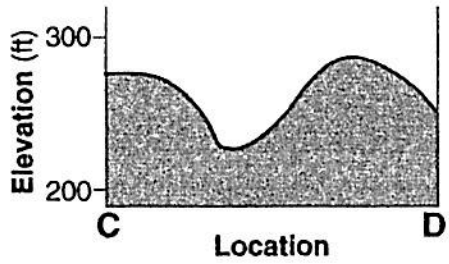
1)



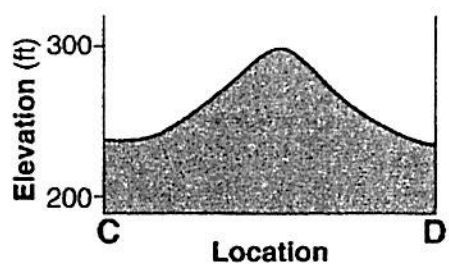
2)



3)



4)



60. What is a possible elevation for the surface of Darry Lin Lake?

1) 228 feet 2) 242 feet 3) 255 feet 4) 268 feet

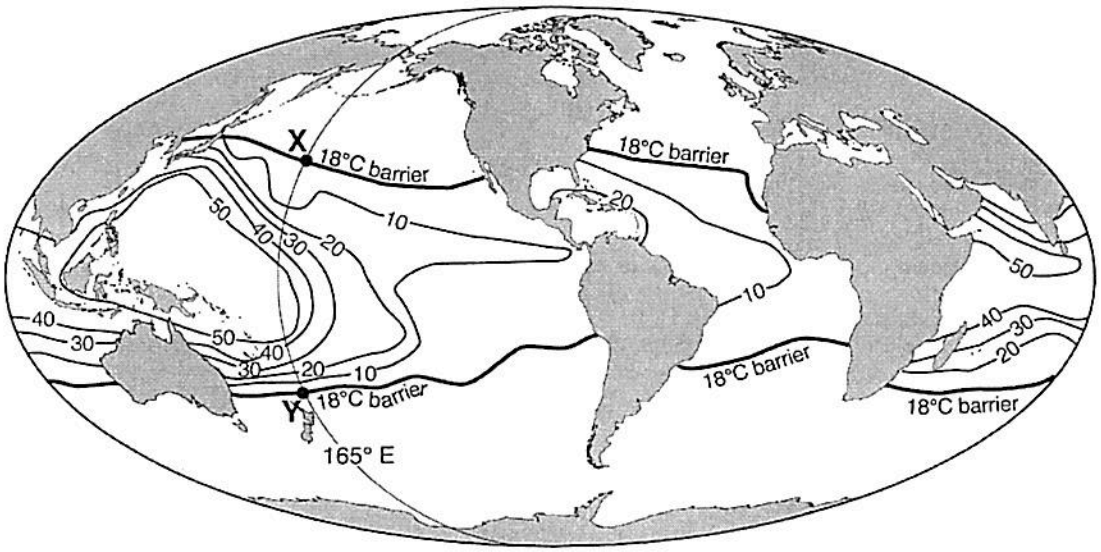
61. What is the approximate gradient from point *A* to point *B* on the map?

1) 25 feet per mile 2) 50 feet per mile 3) 75 feet per mile 4) 100 feet per mile

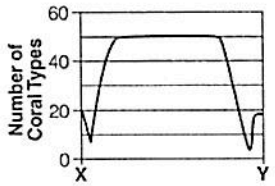
62. In which general direction does Red Creek flow?

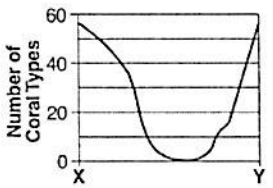
1) northeast 2) southeast 3) southwest 4) northwest

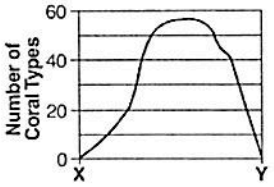
63. Base your answer to the following question on the map below, which shows coral reef distribution and diversity (number of different coral types) around the world. Isolines on the map represent the number of different types of coral. Coral reefs are found mostly in shallow tropical waters and do not grow when ocean temperatures fall below 18°C. The 18°C barrier represents the outer boundaries within which coral reefs normally grow. Points *X* and *Y* are locations on the map.

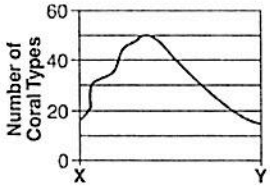


Which graph shows the number of coral types found along the 165° east longitude line between point *X* and point *Y*?

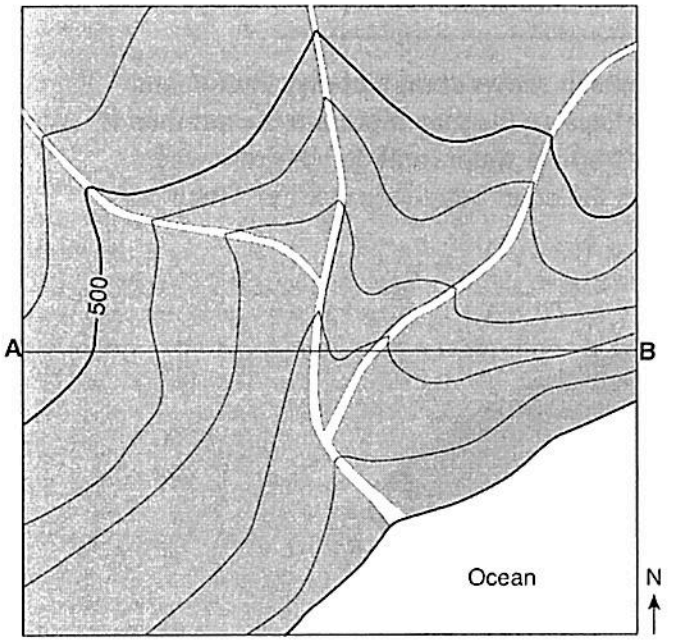
1)


2)


3)


4)


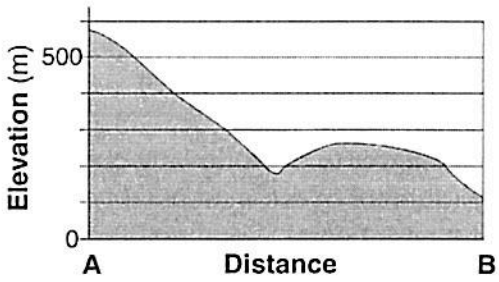
64. The contour map below shows elevations recorded in meters. Line *AB* is a reference line on the map.



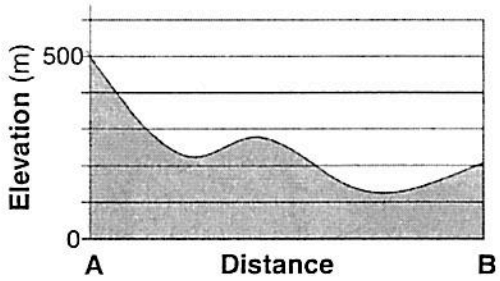
Contour interval = 100 m

Which graph best represents the profile from point *A* to point *B*?

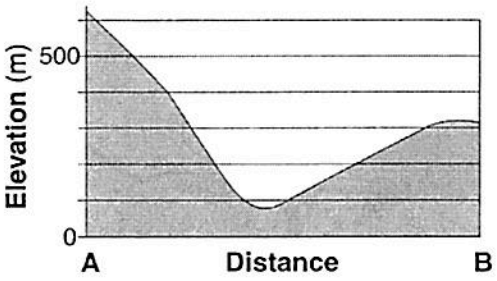
1)



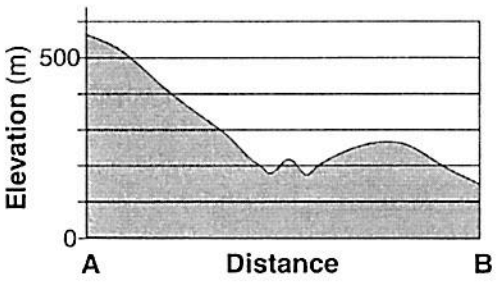
2)



3)

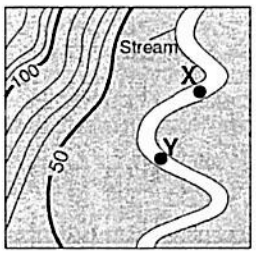


4)

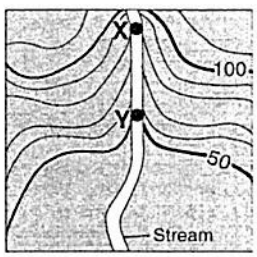


65. The four streams shown on the topographic maps below have the same volume between *X* and *Y*. The distance from *X* to *Y* is also the same. All the maps are drawn to the same scale and have the same contour interval. Which map shows the stream with the greatest velocity between points *X* and *Y*?

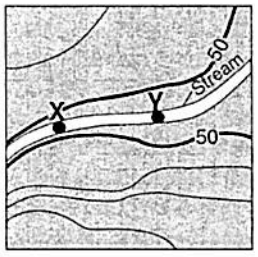
1)



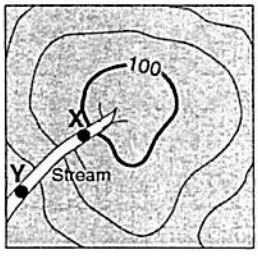
2)



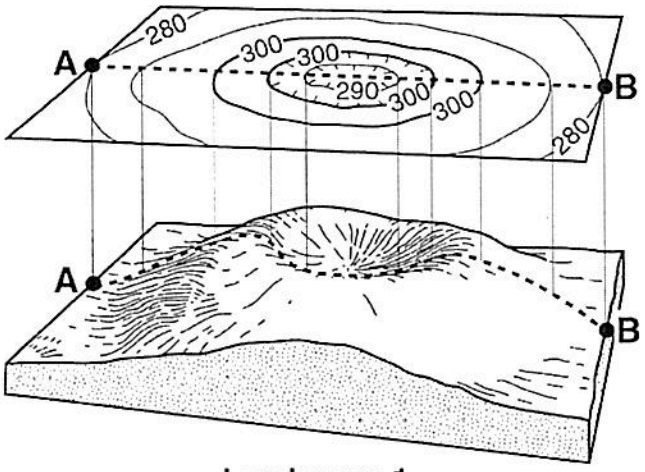
3)



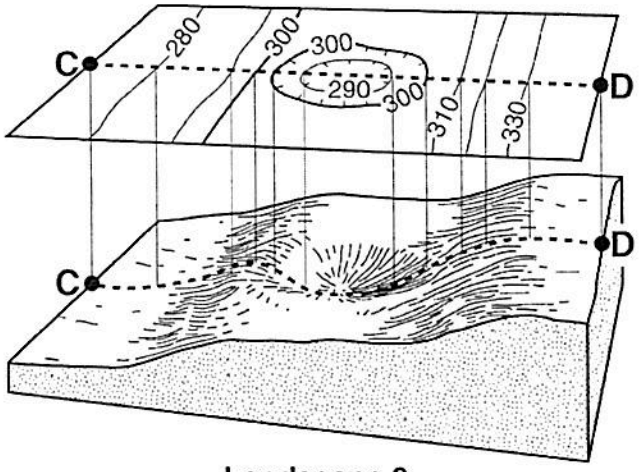
4)



66. Base your answer to the following question on the topographic maps and block diagrams of two landscape regions shown below. The block diagrams show a three-dimensional view of the topographic maps directly above them. Elevations are measured in feet. Points *A*, *B*, *C*, and *D* are locations on Earth's surface.



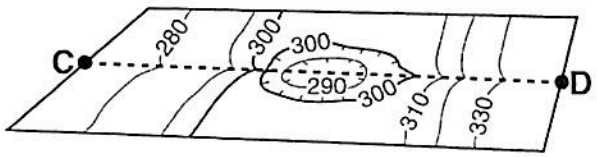
Landscape 1



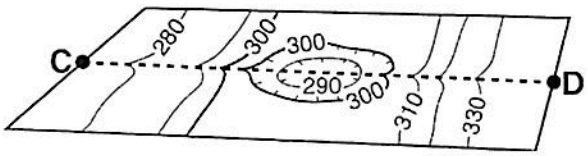
Landscape 2

A stream begins to flow downhill from point *D* toward the depression. After a period of time, the depression fills with water. Overflowing water from the depression moves downhill toward point *C*. Which topographic map shows the most likely resulting change in the contour lines?

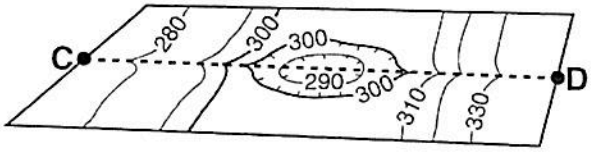
1)



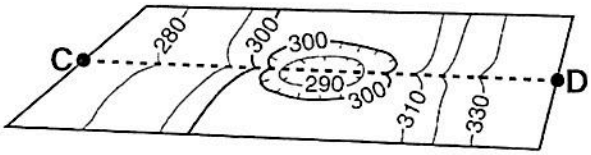
2)



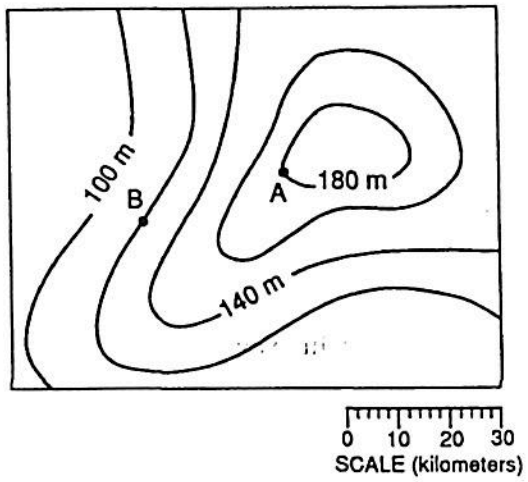
3)



4)



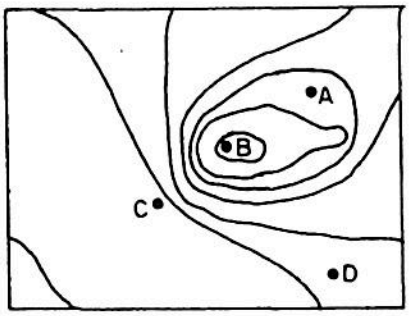
67. The map below represents an elevation field.



What is the approximate gradient between point *A* and point *B*?

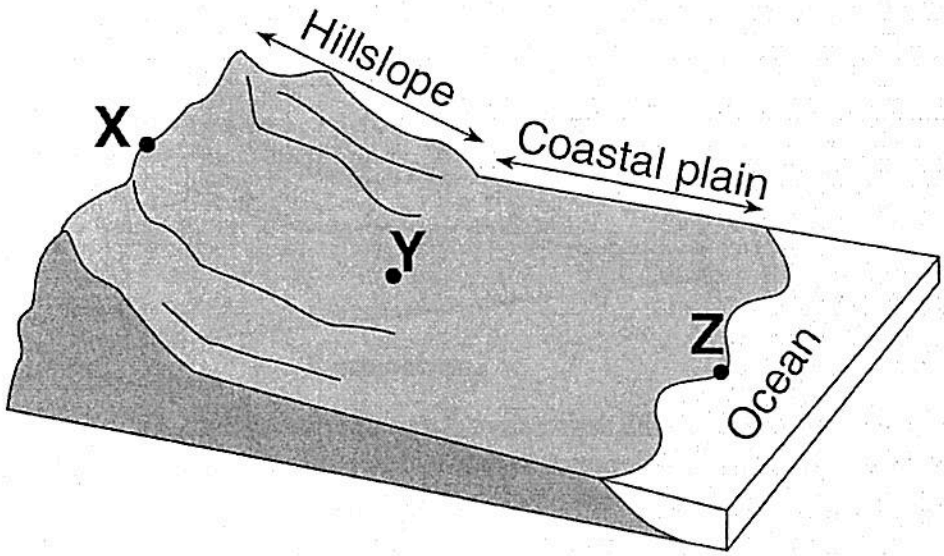
1) 0.5 m/km
2) 2.0 m/km
3) 3.0 m/km
4) 4.0 m/km

68. The diagram below is a contour map. Between which two points is the slope of the hill steepest?



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

Base your answers to questions **69** and **70** on the diagram below, which shows a coastal region in which the land slopes toward the ocean. Point *X* is near the top of the hill, point *Y* is at the base of the hill, and point *Z* is a location at sea level. The same type of surface bedrock underlies this entire region. A stream flows from point *X* through point *Y* to point *Z*. This stream is not shown in the diagram.

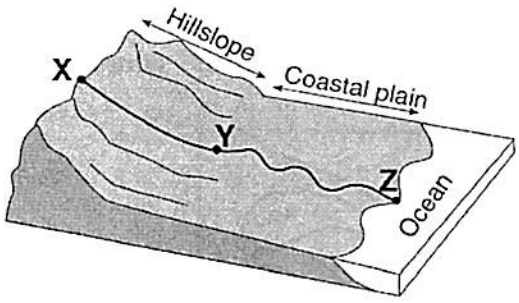


69. Compared to the stream velocity between point *X* and point *Y*, the stream velocity between point *Y* and point *Z* is most likely

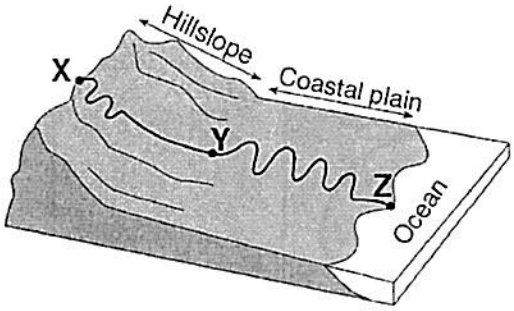
    1) greater, since the slope of the land decreases
    2) greater, since the slope of the land increases
    3) less, since the slope of the land decreases
    4) less, since the slope of the land increases

70. Which diagram best shows the most probable path of the stream flowing from point *X* to point *Z*?

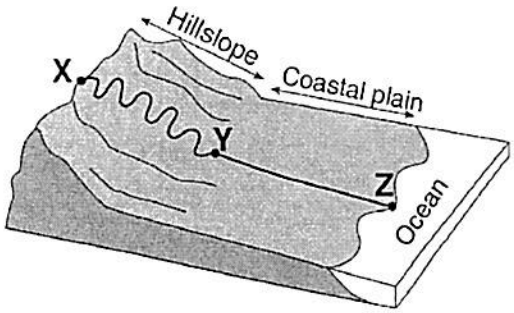
1)



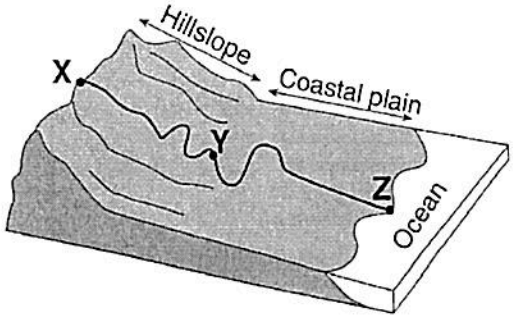
2)



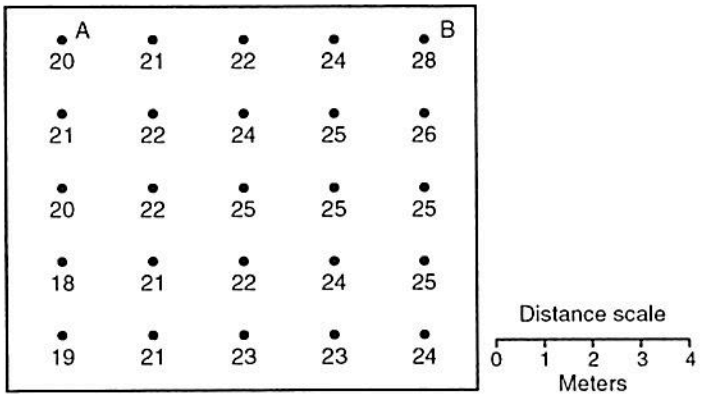
3)



4)

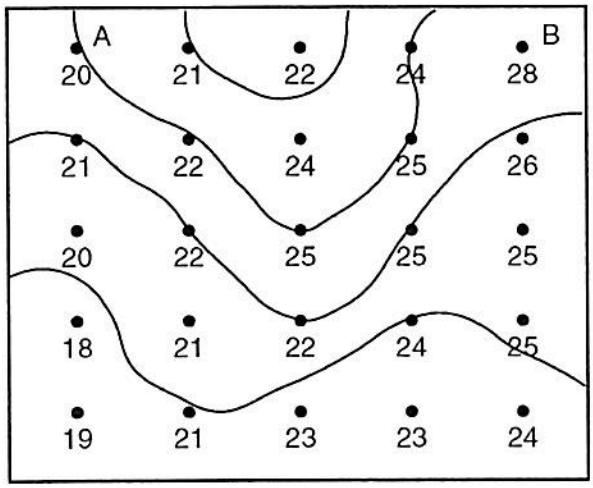


71. The field map below shows air temperature measurements, in degrees Celsius, taken at the same elevation within a closed room. Two reference points, *A* and *B*, are shown.

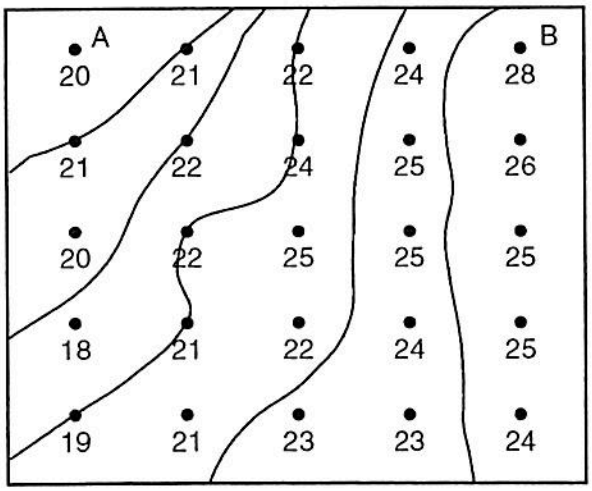


Which temperature field map shows correctly drawn isotherms?

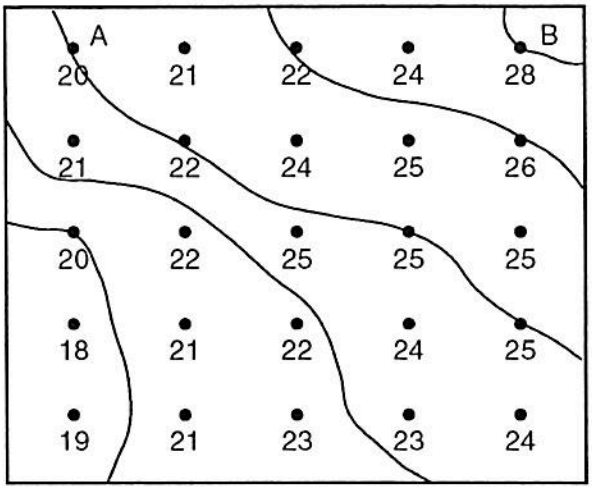
1)



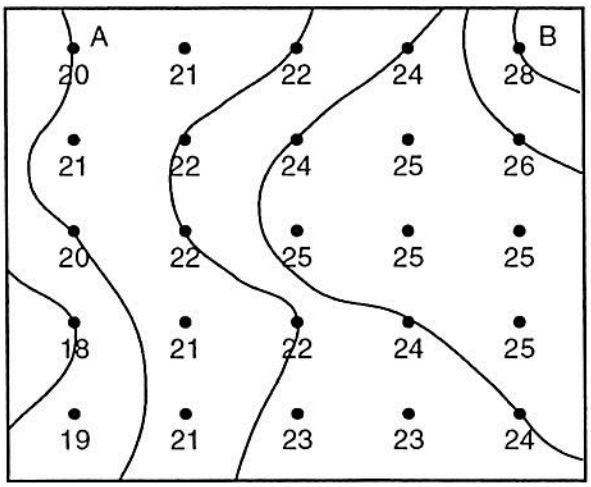
2)



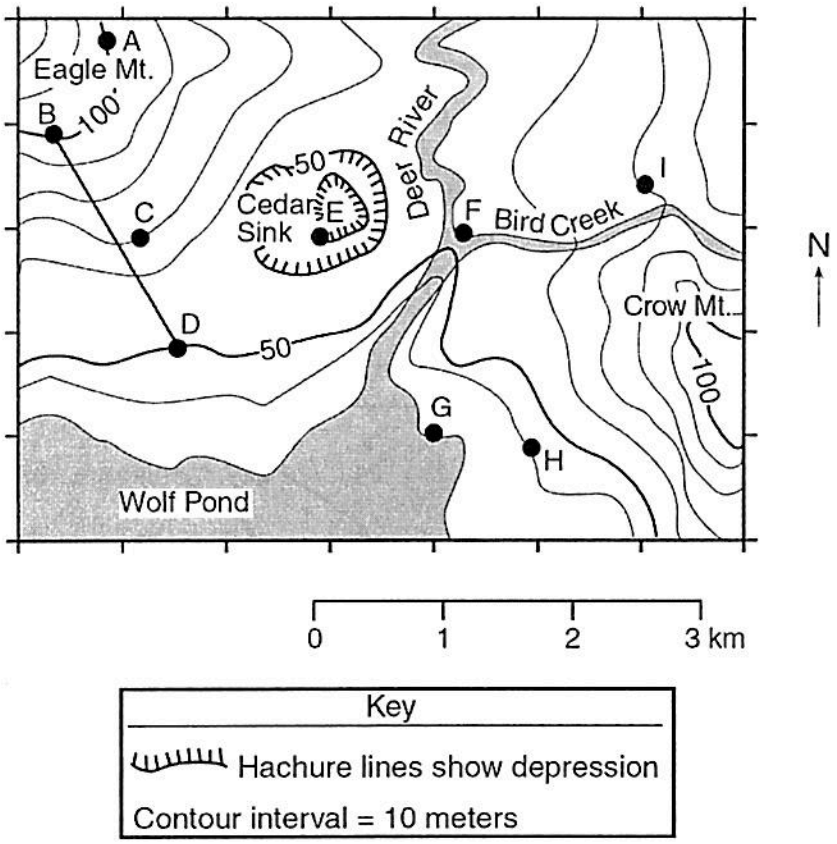
3)



4)



Base your answers to questions **72** through **75** on the topographic map below. Points *A* through *I* are locations on the map. Elevations are shown in meters.



72. Which locations have the same elevation?

1) *A* and *C* 2) *B* and *E* 3) *C* and *I* 4) *F* and *G*

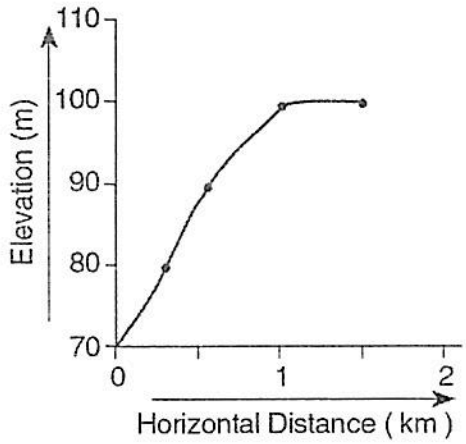
73. In which section of the map is the highest elevation located?

1) northeast 2) northwest 3) southeast 4) southwest

74. The contour lines crossing Deer River show that the river flows

1) northward out of Wolf Pond
2) northward into Wolf Pond
3) southward out of Wolf Pond
4) southward into Wolf Pond

75. The profile below represents certain locations on the map.



The profile represents a cross section of the landscape between points

1) *A* and *D* 2) *B* and *C* 3) *C* and *A* 4) *I* and *H*