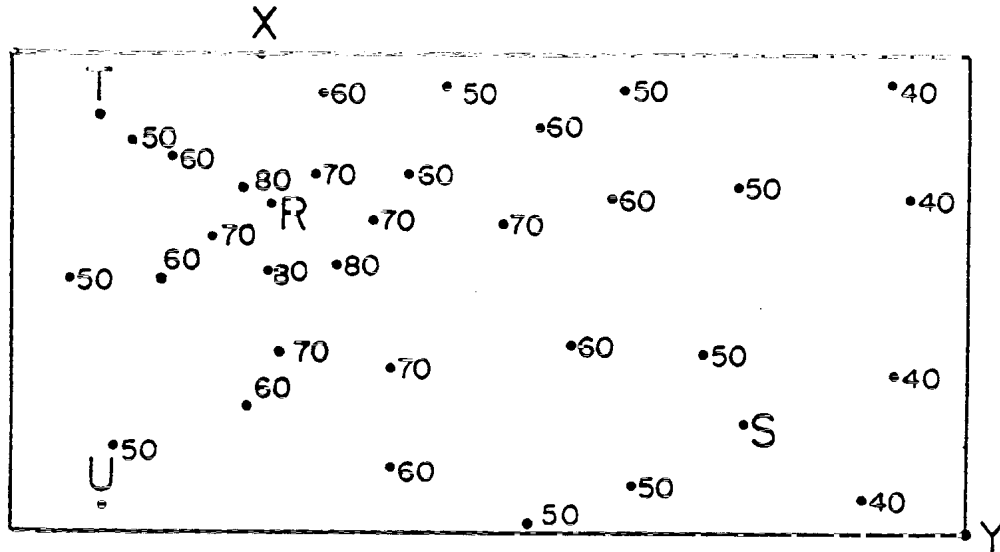
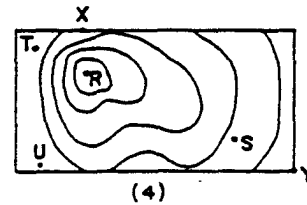
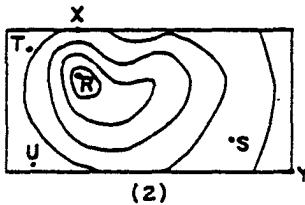
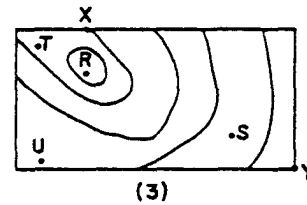
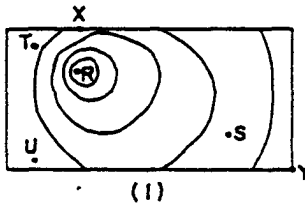


Topic III Practice Exam: Field Maps and Isolines

Directions: Base your answers to **questions 1-4** on your knowledge of Earth Science and on the diagram below. This diagram shows the elevation, in meters, of several points within a geographical region as well as points R, S, T, U, X, and Y whose elevations are not recorded.



1. Which diagram best represents the isolines pattern of the elevation field?

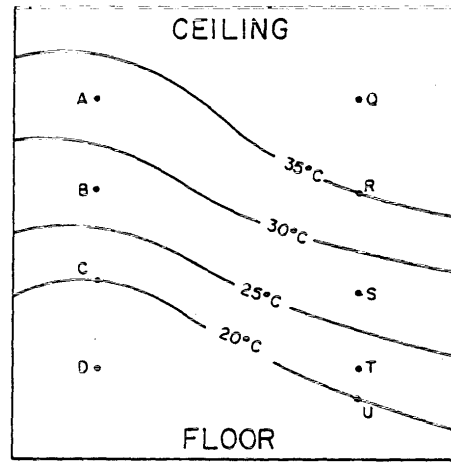


2. The point with the highest elevation would most probably be located nearest point
- | | |
|-------|-------|
| (1) R | (3) U |
| (2) T | (4) Y |
3. The elevation of point S is most likely
- | | |
|---------------|---------------|
| (1) 88 meters | (3) 47 meters |
| (2) 55 meters | (4) 39 meters |
4. The steepest average gradient occurs between points
- | | |
|-------------|-------------|
| (1) R and S | (3) R and U |
| (2) R and T | (4) T and U |

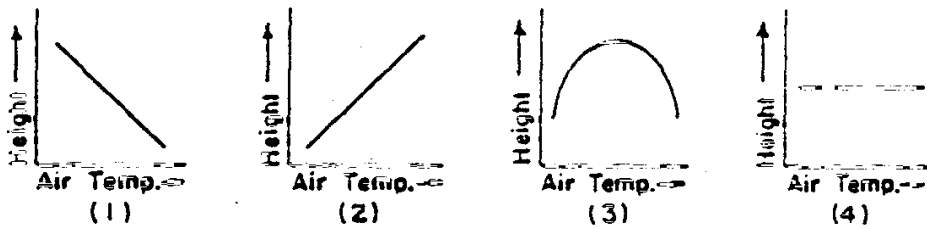
Directions: Base your answers to **questions 5-7** on your knowledge of earth science and on the diagram to the right. The diagram represents a temperature field for a vertical cross section of a room, from ceiling to floor.

5. At which two points would the temperature most likely be the same?

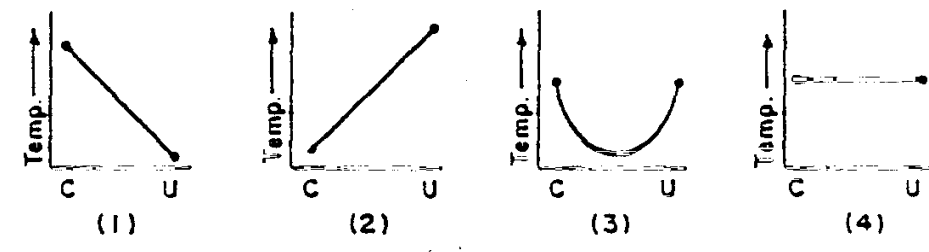
- (1) B and S
- (2) Q and A
- (3) C and T
- (4) R and Q



6. Which graph best represents the variations in the room temperature from the floor to the ceiling?



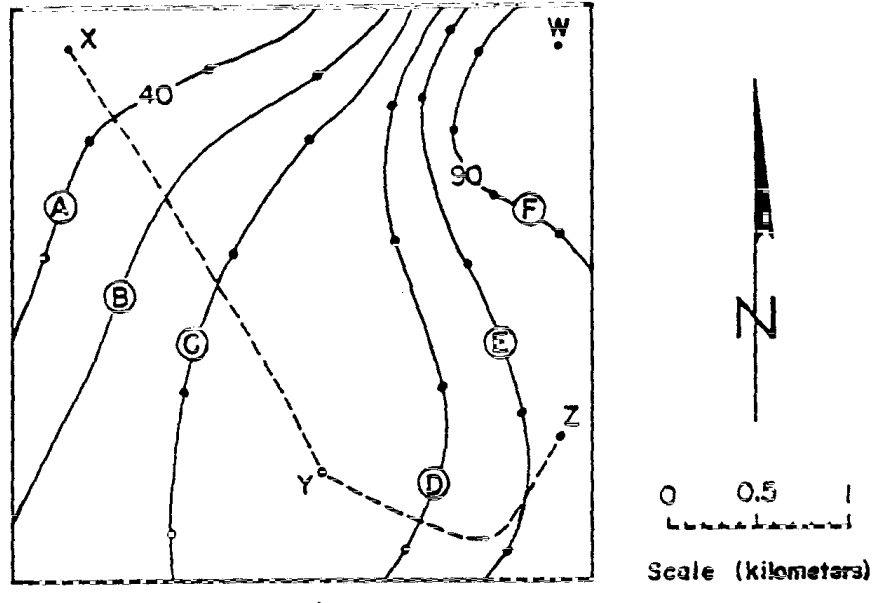
7. Which graph best represents the temperature change along the isotherm from point C to point U?



8. Which statement is true about an isoline on an air temperature field map?

- (1) It represents an interface between high and low barometric pressures.
- (2) It indicates the direction of maximum insolation.
- (3) It increases in magnitude as it bends southward.
- (4) It connects points of equal air temperature

Directions: Base your answers to **questions 9-12** on the information provided by the diagram. The diagram represents a sketch drawn in a notebook by an Earth Science student. Lines A, B, C, D, E, and F are isolines. The points along the isolines indicate the only locations where actual measurements were made. Points W, X, Y, and Z are reference locations in the field diagram.



9. The value of point Y might be

(1) 55	(3) 75
(2) 65	(4) 93

10. What is the approximate distance from point X to point Z along the entire dashed line XYZ?

(1) 1.5 km	(3) 4.0 km
(2) 3.5 km	(4) 4.5 km

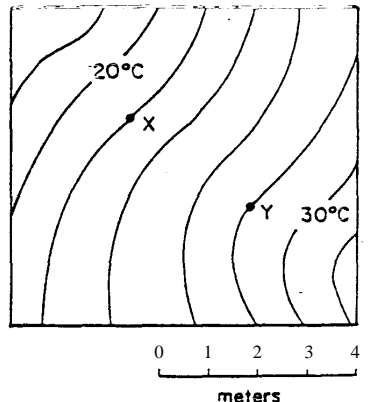
11. Between which two points is the greatest gradient?

(1) X-W	(3) Y-W
(2) X-Y	(4) Z-W

12. The isolines of this field diagram are for snow depth in centimeters. In which part of the diagram is the snow deepest?

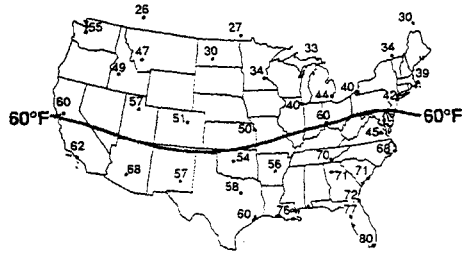
(1) southeast corner	(3) southwest corner
(2) northeast corner	(4) northwest corner

13. The diagram below represents a temperature field in degrees Celsius. What is the approximate temperature field gradient between points X and Y? [Refer to the Earth Science Reference Tables.]

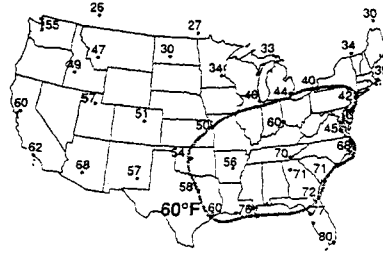


- | | |
|--------------|------------|
| (1) 0.5 °C/m | (3) 3 °C/m |
| (2) 2 °C/m | (4) 6 °C/m |

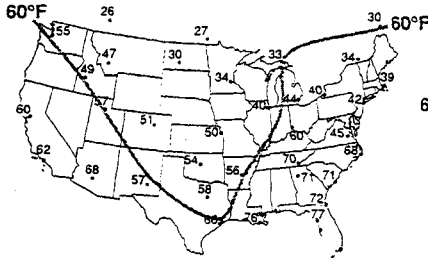
14. On which map of temperatures across the United States is the 60°F isotherm drawn correctly?



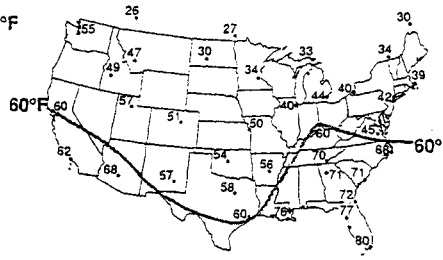
(1)



(3)



(2)



(4)

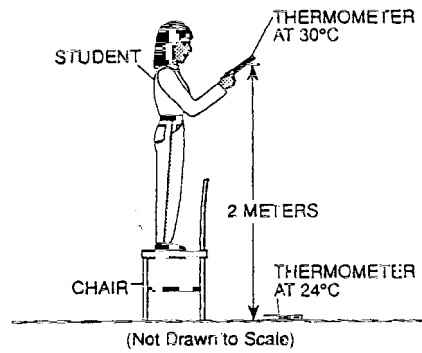
15. A stream in New York State begins at a location 350 meters above sea level and flows into a swamp 225 meters above sea level. The length of the stream is 25 kilometers. What is the gradient of the stream?

- (1) 5 m/km (2) 9 m/km (3) 12 m/km (4) 15 m/km

16. In the diagram the thermometer held 2 meters above the floor shows a temperature of 30°C. The thermometer on the floor shows a temperature of 24°C.

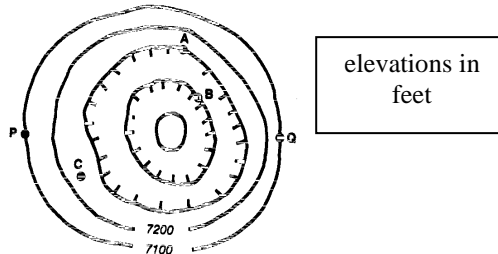
What is the temperature gradient between the two thermometers?

- (1) 6 °C/m (3) 3 °C/m
(2) 2 °C/m (4) 4 °C/m



17. What is the elevation of point A on the map?

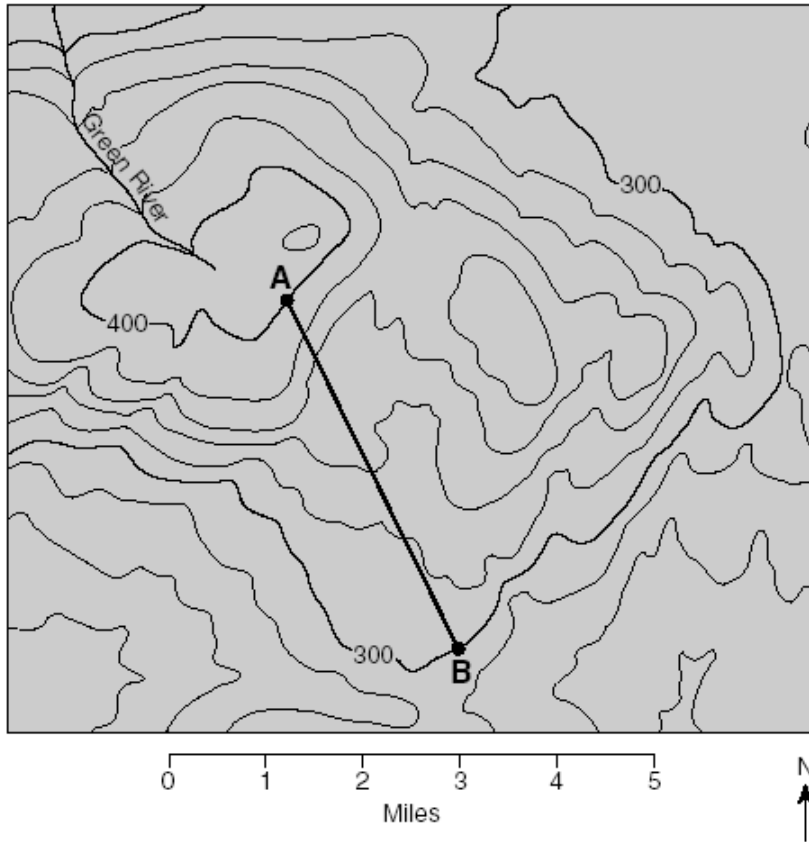
- (1) 7000 ft
(2) 7100 ft
(3) 7200 ft
(4) 7300 ft



18. If no elevation values were given, which general rule could be used to establish the direction a river is flowing?

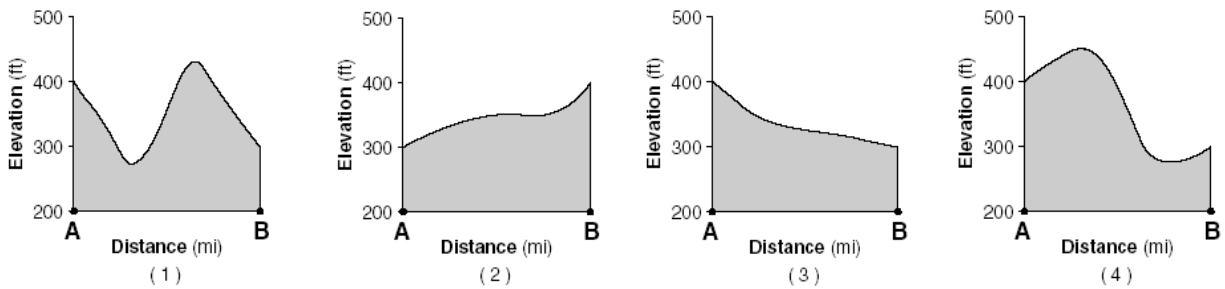
- (1) Rivers shown on maps always flow southward.
(2) Rivers always flow toward large bodies of water.
(3) Contour lines bend upstream when crossing a river.
(4) A large body of water is generally the source of water for a river.

Base your answers to questions 19 through 22 on the topographic map below. Elevations are in feet.



19. Toward which direction does the Green River flow?
 (1) northeast (3) southeast
 (2) northwest (4) southwest
20. What is the gradient along the straight line between points A and B?
 (1) 10 ft/mi (3) 25 ft/mi
 (2) 20 ft/mi (4) 35 ft/mi

21. Which graph best represents the profile along line AB?



22. What evidence can be used to determine that the land surface in the northeast corner of the map is relatively flat?
 (1) a rapidly flowing river (3) a large region covered by water
 (2) the dark contour line labeled 300 (4) the absence of many contour lines