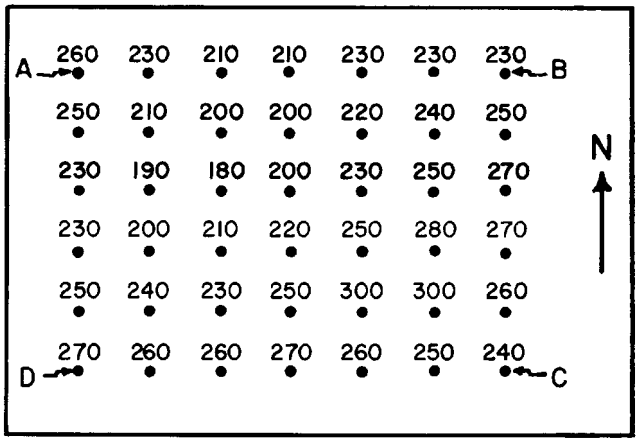
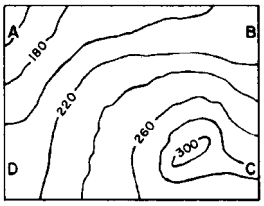
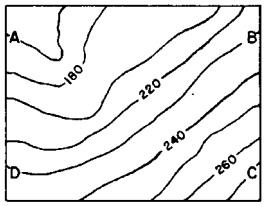
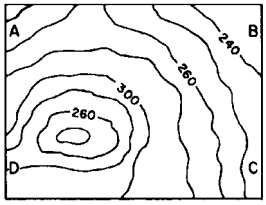
Base your answers to questions **1** through **5** on your knowledge of earth science and on the diagram below which represents the elevation data for a certain landscape region. Points *A*, *B*, *C*, and *D* are specific locations on the surface of this landscape.

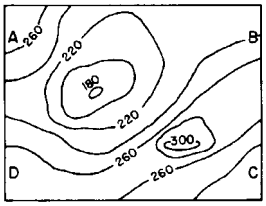


1. Which diagram best represents the location of the isolines for the elevation field of this landscape?

(1) 

(2) 

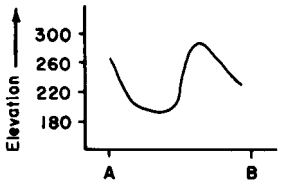
(3) 

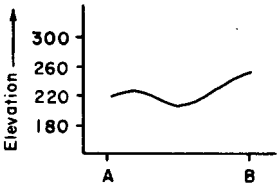
(4) 

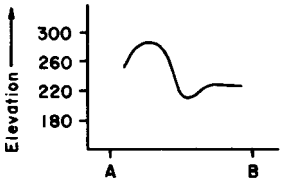
2. Determine the location of the highest landscape feature in the elevation field. This landscape feature is found in which region of the elevation field?

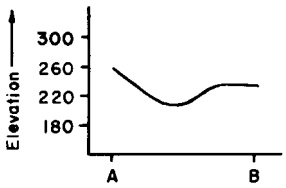
(1) northeast (2) northwest (3) southeast (4) southwest

3. Which graph best represents the elevation profile along a straight line from point *A* to point *B*?

(1) 

(2) 

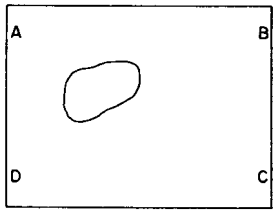
(3) 

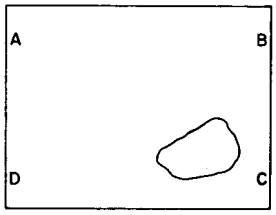
(4) 

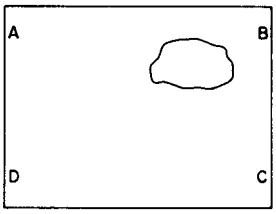
4. The steepest slopes in this landscape are located along a straight line between points

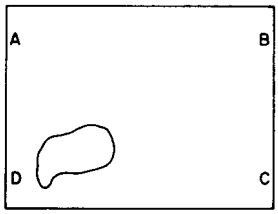
(1) *A* and *C* (2) *B* and *C* (3) *B* and *D* (4) *D* and *C*

5. If the symbol in the diagrams below indicates the possible location of a lake, which diagram best represents where a lake would most likely be located on this landscape?

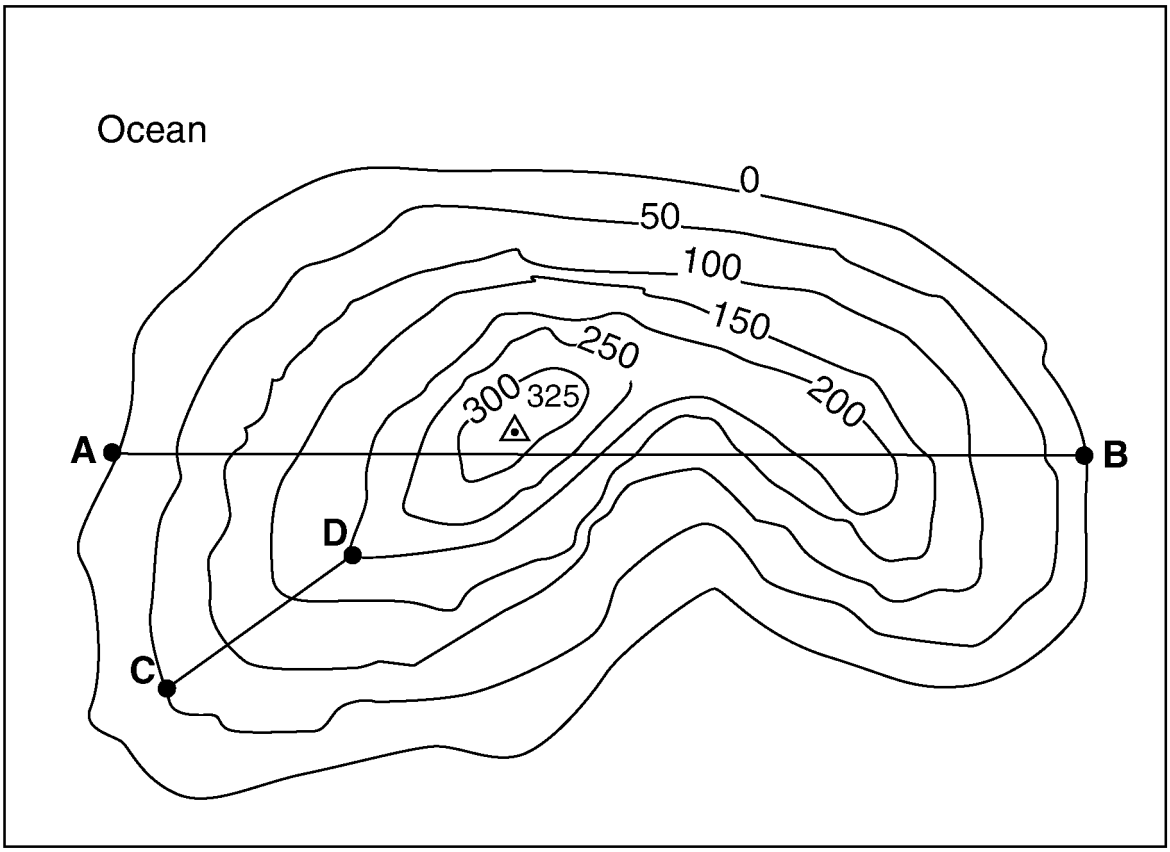
(1) 

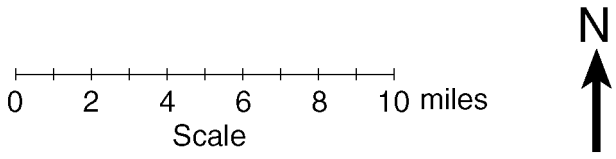
(2) 

(3) 

(4) 

Base your answers to questions **6** and **7** on the topographic map of an island shown below. Elevations are expressed in feet. Points *A*, *B*, *C*, and *D* are locations on the island. A triangulation point shows the highest elevation on the island.





6. On the grid provided above, construct a topographic profile representing the cross-sectional view between point *A* and point *B*, following the directions below.

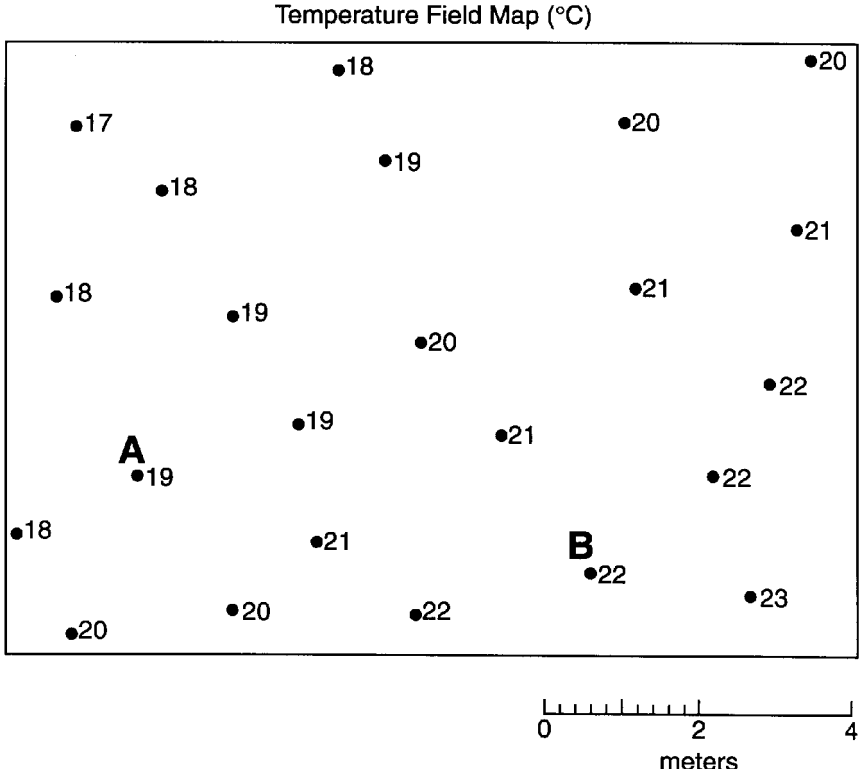
a Plot the elevation of the land along line *AB* by marking, with a dot, the elevation of *each* point where a contour line

is crossed by line *AB*.

b Connect the dots with a smooth, curved line to complete the topographic profile.

7. What is the average gradient, in feet per mile, along the straight line from point *C* to point *D*? _____ft/mi

Base your answers to questions **8** through **10** on the temperature field map below. The map shows temperature readings (ºC) recorded by students in a science classroom. The readings were taken at the same time at floor level. Temperature readings for points *A* and *B* are labeled on the map.



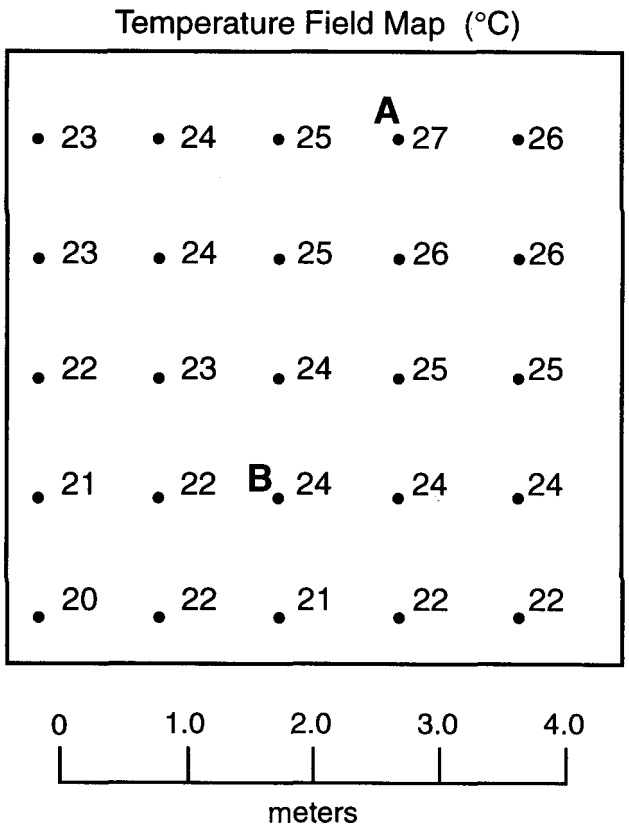
8. On the temperature field map, use solid lines to draw the 18ºC, 20ºC, and 22ºC isotherms. Isotherms must extend to the boundary of the map. Label each isotherm to indicate its temperature.

9. Determine the temperature gradient from point *A* to point *B* by following the directions below.

a Write the equation used to determine the gradient.
b Substitute values from the field map into the equation.
c Solve the equation and label the answer with the proper units.

10. State the temperature of point *A* in degrees Fahrenheit (ºF).

Base your answers to questions **11** and **12** on the temperature field map below. the map shows 25 measurements (in ºC) 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.

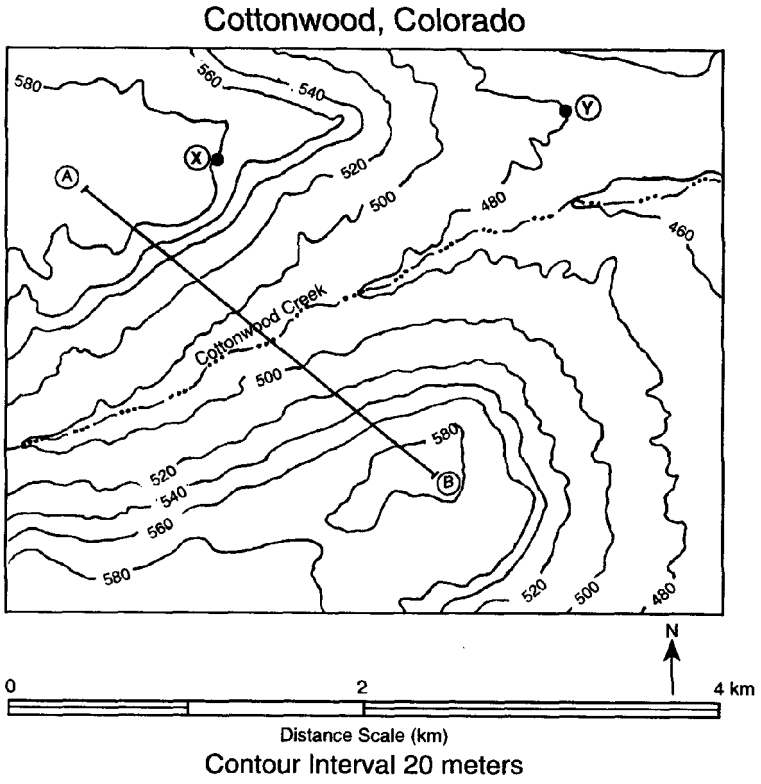


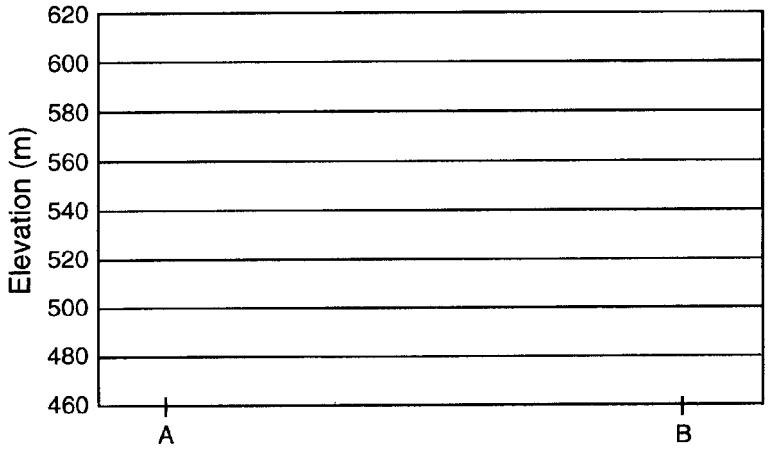
11. On the temperature field map above, draw threee isotherms: the 23 ºC isotherm, the 24 ºC isotherm, and the 25 ºC isotherm.

12. Calculate the temperature gradient between locations A and B on the temperature field map, following the directions below.

    a Write the equation for the gradient.
    b Substitute data from the map into the equation.
    c Calculate the gradient and label it with the

Base your answers to questions **13** through **16** on the topographic map of Cottonwood, Colorado, below. Points *A*, *B*, *X*, and *Y* are marked for reference.





13. State the general direction in which Cottonwood Creek is flowing.

14. State the highest possible elevation, to the *nearest meter*, for point *B* on the topographic map.

15. On the grid provided on *your answer paper*, draw a profile of the topography along line *AB* shown on the map.

16. In the space provided, calculate the gradient of the slope between points *X* and *Y* on the topographic map, following the directions below.

a Write the equation for gradient.
b Substitute data from the map into the equation.
c Calculate the gradient and label it with the proper units.

Question ID's in Numerical Order.

1. 89
2. 90
3. 91
4. 92
5. 93
6. 2827
7. 2828
8. 2829
9. 2830
10. 4086
11. 4087
12. 4088
13. 4266
14. 4267
15. 4735
16. 4736

Question ID's in Test Order.

1. 89
2. 90
3. 91
4. 92
5. 93
6. 4735
7. 4736
8. 4086
9. 4087
10. 4088
11. 4266
12. 4267
13. 2827
14. 2828
15. 2829
16. 2830