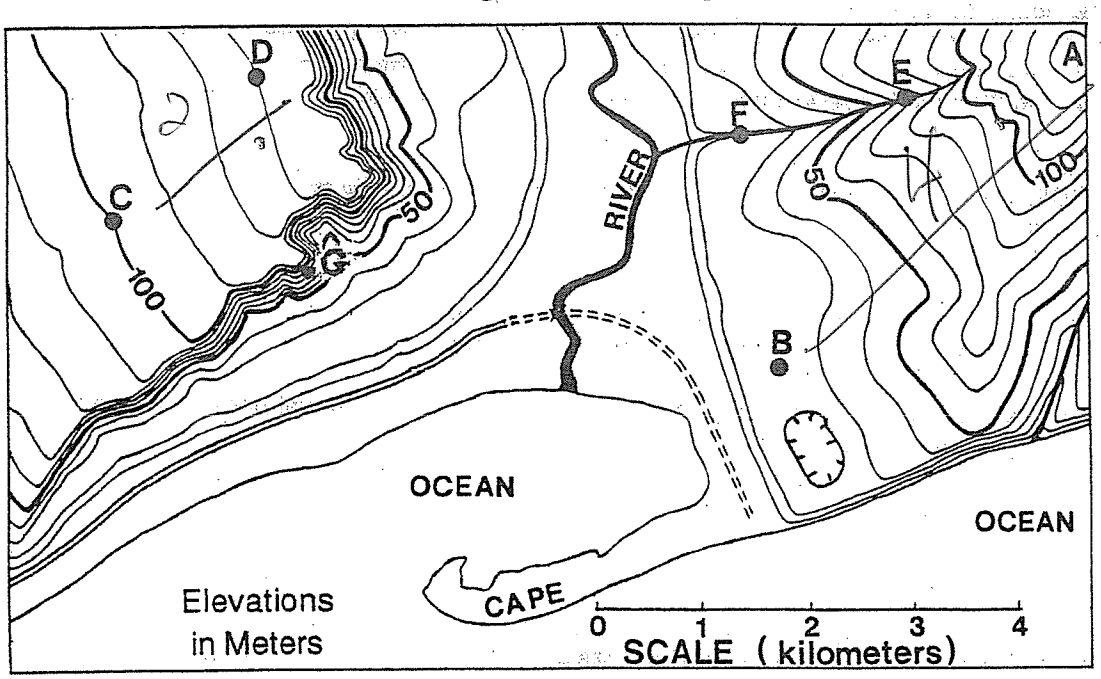
Date _____ Per. _____

Gradient is a synonym for slope. If a hill has a large gradient, it is a steep hill which changes quickly in elevation. On any isoline map, the places with the steepest gradient will be the places where the isolines are the closest together. On the map below, where is the gradient the steepest? _____



Gradient can be calculated: $\text{Gradient} = \frac{\text{Change in Elevation}}{\text{Change in Distance}}$ $\left(Gr = \frac{\Delta \text{ Elev}}{\Delta \text{ Dist}}\right)$

For example, the distance from E to F is _____ km

The elevation of E is _____ m and the elevation of F is _____ m. The difference is _____ m.

Therefore, $Gr = \frac{\Delta \text{ Elev}}{\Delta \text{ Dist}} \quad \frac{50 \text{ m}}{1.6 \text{ km}} \quad = 33.3^{\text{m}}/\text{km}$

(Please note how the units are carried through.)

Solve the problems below as shown above.

Be sure to start each with the formula for gradient, show your work, and carry through with the proper units.

---

1 Calculate the gradient from C to D.
Be sure to show your work here! ➔)

2. Calculate the gradient from A to B.

3. Another word for gradient is _____.

4. What is the contour interval on this map? _____

5. On any isoline map, the gradient is the steepest where _____.

Review **Gradient Review** Name _____

Gradient is defined as a change in field value divided by the change in distance. A field is a region in which the same kind of measurement can be made in different places. In calculations of gradient, the field value will be a variable such as elevation, temperature, or wind speed.

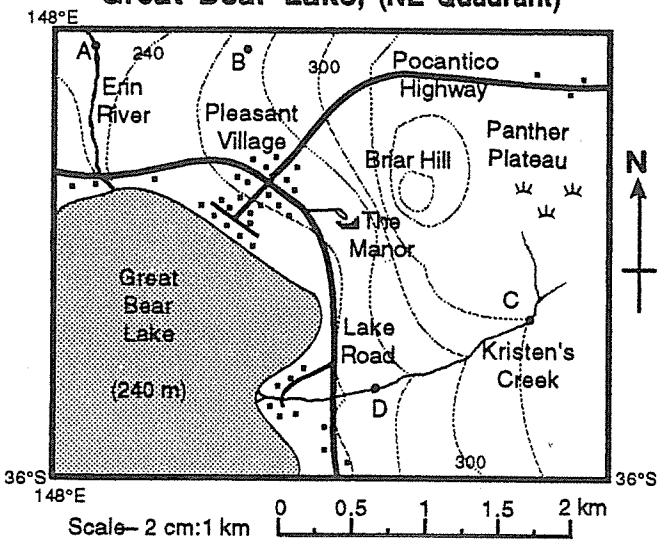
Date _____ Per. _____

(Show your calculations in the space to the right. (Include Algebraic formula, Correct values, Steps to solution, and Units))

1. What is the average topographic gradient between two places that are 5 km apart, and one is 40 meters higher than the other?

2. What is the temperature gradient between a place where the temperature is 40°C and another place, 15 km away, that is at 35°C? (Show calculations for each problem.)

Great Bear Lake, (NE Quadrant)



3. In what direction does Kristen's Creek flow? _____

4. What is the distance from A to C? _____

5. Which two points shown by letters are at the same elevation? _____ & _____

6. What is the elevation of point B?_____
   point A? _____
   ...the top of Briar Hill? _____

7. Where on this map is the gradient steepest?

   _____

8. What is the average gradient from C to D? (Show your calculation *neatly* below.)

9. Where in the world is this place?
   (Hint: Look at the terrestrial coordinates.) _____

---

10. Which two points have about the same temperature? _____ & _____

11. What is the temperature interval between adjacent isolines? _____

12. What is the approximate temperature at point F? _____

13. What is the approximate temperature at point A? _____

14. Calculate the temperature gradient from A to E. Show your work below.

An Indoor Temperature Field
(Temperatures in °C)