Best Route

NAME _____

Use the information given on the Road Trip! overhead to solve these problems.

1. Using the Nearest Neighbor Algorithm, find the shortest round-trip starting in Cleveland.

   Cle to _____ to _____to _____ to _____ to **Cle**   Total Distance: _____

2. Use the Nearest Neighbor steps using each of the other cities as the starting point.

   Cin to_____ to _____to _____ to _____ to **Cin**   Total Distance: _____

   Pitt to_____ to _____to _____ to _____ to **Pitt**   Total Distance: _____

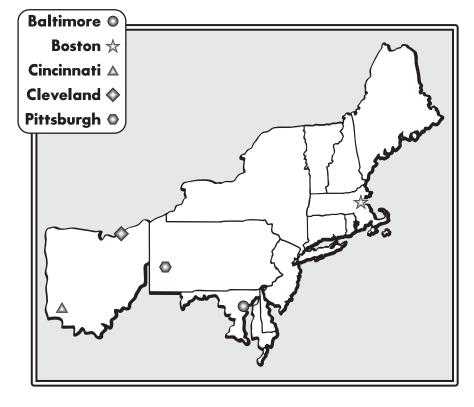   **Bos** to_____ to _____to _____ to _____ to **Bos**   Total Distance: _____

   Bal to _____ to _____to _____ to _____ to **Bal**   Total Distance: _____

3. Were the total distances in Questions 1 and 2 the same or different? Is this what you expected? Why do you think the results turned out this way?

4. Using the Cheapest Link Algorithm, find the shortest round-trip. Draw the route on the map.

Baltimore ⬤
Boston ☆
Cincinnati △
Cleveland ◆
Pittsburgh ⬡

ROUTE	DISTANCE

5. What is the total distance of the route found using the Cheapest Link Algorithm?

6. Using the Brute Force Algorithm, how many unique round-trips are possible?

7. One of the possible round-trips results in a total distance of 1588 miles. Determine the tour that begins and ends at Cleveland for this round trip.

8. What is the best tour to follow on your road trip? Explain your reasoning.

9. Which algorithm was the easiest to implement? Explain your reasoning.

10. Which algorithm was the hardest to implement? Explain your reasoning.

11. Which algorithm will always find the shortest distance? Explain your reasoning.