

# Lab CC 3.2 Trip Routes

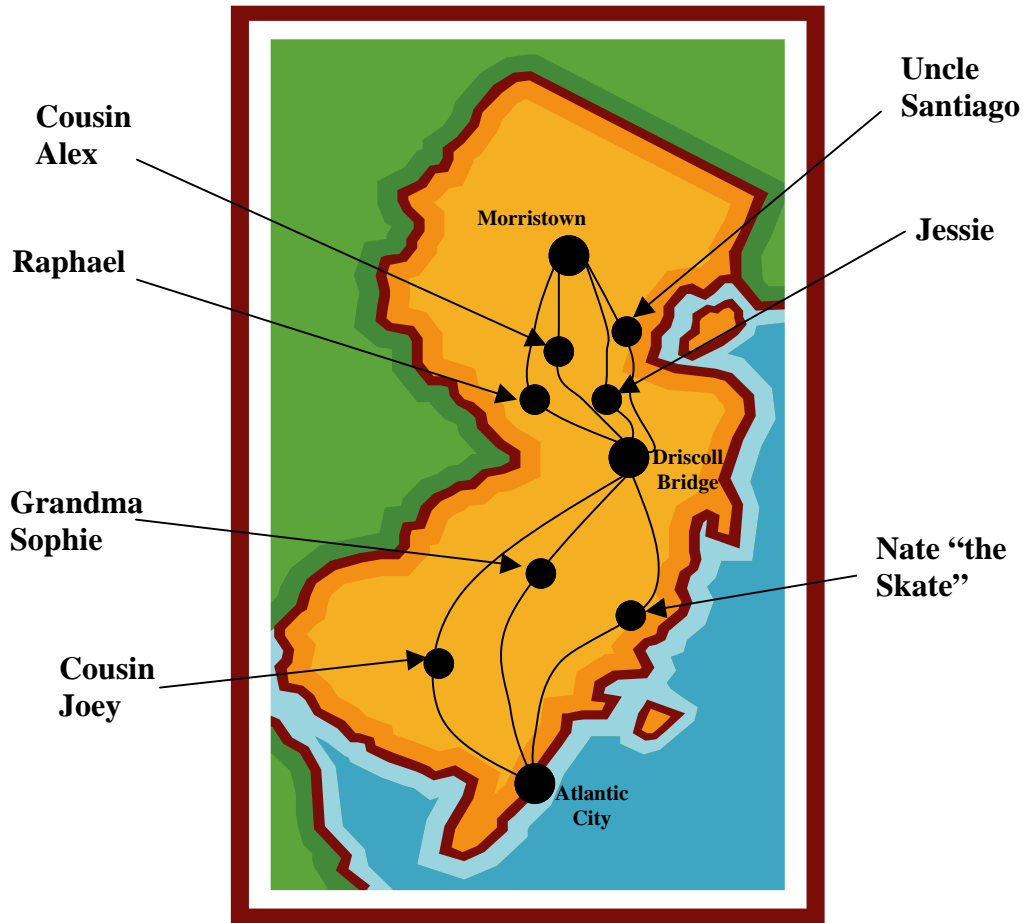


Name \_\_\_\_\_

Date \_\_\_\_\_ Period \_\_\_\_\_

## Clever Counting Unit

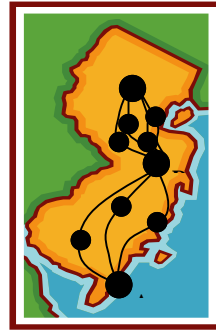
Freddie and his family are planning a trip to Atlantic City (A.C.). Freddie’s mom said that along the way they could make two stops to visit friends or relatives. Freddie looked at the map and told his mom that it made sense to visit one person from North Jersey and one from South Jersey. On the **first “leg”** of their trip, they could stop to visit either Uncle Santiago, Cousin Alex, or family friends Jessie or Raphael. On the **second leg**, they could visit Grandma Sophie, Cousin Joey, or Nate “the Skate”, their old next-door neighbor.



1. How many different people can they visit on the first part of their trip? \_\_\_\_\_
2. How many different people can they visit on the second part of their trip? \_\_\_\_\_
3. How many different combinations of people can they visit, based on Freddie’s restriction of visiting one from the north and one from the south? \_\_\_\_\_  
Complete the network diagram below and show your work (DB = Driscoll Bridge):



4. Freddie's little brother Howie says that they can visit 42 different combinations of people. Explain the error in Howie's calculation.



5. Suppose Freddie's mom chose a route (path) from Morristown to A.C. at random.
- a) What is the probability they would visit Raphael (north)? \_\_\_\_\_
- b) What is the probability they would visit Nate "the Skate" (south)? \_\_\_\_\_
6. Mom decides that there are two more friends in North Jersey that they could visit. How would this change the number of possible routes? Complete the network diagram below that shows the detail of your calculation.



7. NOW, Mom decides that there are three more friends in South Jersey that they could visit. How would this change the number of possible routes? Complete the network diagram below that shows the detail of your calculation.



8. Based on your diagram in #7 above, how many different **ROUND TRIPS** can they make (a round trip is from Morristown to Atlantic City and back to Morristown) if they **CANNOT** visit the same people on the way back that they visited on the way down? Explain the components of your calculation.