

Assessment Option #3 – Street Routes

Find a city map of a major city in Iowa. Choose a city that has more than one one-way street. Print a copy of this map, make sure you can read the street names and identify at least 6 major buildings.

On a blank sheet of paper, mark off at least six major buildings or landmarks. Make this as accurate as possible. Label them by name (if known) or by using variables (if names are unknown).

Then on another sheet of paper, make a digraph of the routes to and from each of your marked spots. A digraph is a matrix that uses a “1” to resemble a path directly from one point to another and a “0” to resemble there is no direct path from one point to another. Label your digraph.

Make an answer key for your digraph.

Hand your original digraph and first sheet (the one with only the major markings) to a classmate. You can have a peer or family member do this, but you have to explain how to read a digraph to them. The person you have given the papers to, must use your digraph to recreate the roads between each marked spot. They must mark one-ways and which way the one-way goes. If names are used to mark the major spots, see if they can identify what city you used.

After this, write a short paper answering the following questions:

- What city did you use? Why?
- What method did you use in creating your digraph?
- Was your “partner” able to recreate the streets? Could this person identify the city you used?
- How do the created street routes compare (the one you created for your answer key and the one the other person recreated)?

Hand in the digraph, your answer key, the work from the other person, and the answers to your questions.