

Name:

Date:

Graph Theory Open Questions

The following are 6 questions that our class has not answered about graph theory. In groups of 2-3, choose one that you want to answer and do so. After you answer the question, write and tape a video to teach the class about your question. You may also write and answer your own question (as long as a teacher checks it).

1. Does it matter where you start on an Eulerian Circuit? Can you start at any random place and get back to where you started? Explain/demonstrate.
2. Can you get "stuck" on an Eulerian Circuit (i.e. take a route on an Eulerian Circuit that doesn't get you back to where you started)? Explain/demonstrate.
3. Does it matter where you start on an Eulerian Path? Can you start at any random place and walk all the edges exactly once? Explain/demonstrate.
4. Is it possible to make a graph with an Eulerian Circuit where you will also be able to walk all the **vertices** (points) exactly once and end up where you started? Is it possible to make an Eulerian Circuit where you will **not** be able to?
5. Is it possible to make a graph with an Eulerian Path where you will be able to walk all the **vertices** (points) exactly once? Is it possible to make a graph with an Eulerian Path where you will not be able to?
6. How can the City of Boston most efficiently plow the area near Fenway?

Criteria for Success. Successful math work and video presentation includes ...

For your math work – on a poster.

A successful answer to your question(s) includes ...

- A clear solution sentence or sentences;
- Examples/work that support your solution(s);
- A written explanation of how your examples/work support your solution(s).

For your presentation.

A successful **video-recorded presentation** includes a written script with all the following ...

- Prepared visuals to aid in the explanation of the question(s) and answer(s);
- A restatement of the question in student-friendly words with visuals;
- A prediction for each question;
- The solution(s) clearly explained and stated using the examples;
- All student voices involved significantly.