

This miniproject asks you to create graphs where the vertices represent MSUM buildings. Consider the following MSUM buildings.

| | | |
|-------------------|-------------------------|----------------------|
| Bridges Hall | Livingston Lord Library | Owens Hall |
| Flora Frick Hall | Lommen Hall | Science Lab Building |
| Hagen Hall | Maclean Hall | |
| King Biology Hall | Nemzek Hall | Weld Hall |

- (a) Create a graph with the vertices representing the buildings and where an edge connects two buildings if you can get from one to another without going outside.
- (b) Create a graph with the vertices representing the buildings and where an edge connects two buildings if *you* have a class in each of them this semester.
- (c) Create a graph with the vertices representing the buildings and where an edge connects two buildings if *you* have been in both of them in the previous seven days (state which seven days that you are talking about).
- (d) Is the graph in part (a) a connected graph?
- (e) Is the graph in part (b) a connected graph?
- (f) Is the graph in part (c) a connected graph?
- (g) Are there any isolated vertices in the graph in part (a)?
- (h) Are there any isolated vertices in the graph in part (b)?
- (i) Are there any isolated vertices in the graph in part (c)?