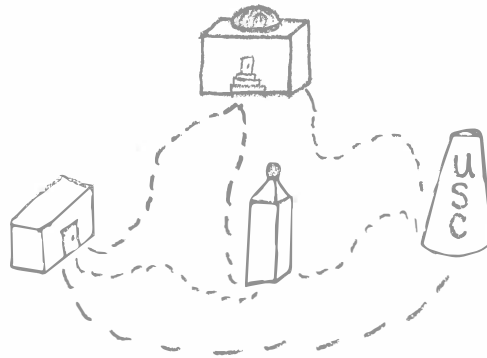


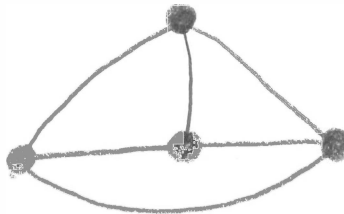


## Scavenger Hunt: Mapping Your Way

This scavenger hunt has led you on a path to some of USC's most well-known sites. The path you took between them was just one of many possible paths. There is something special about the way these sites are connected...



None of the paths cross! For convenience, we can let each site be represented by a dot,  $\bullet$ . Then our map becomes



In Graph Theory, figures with this property are called **planar graphs**. The dots are called **vertices**, the lines between them **edges**, and the spaces around them **faces**.

Vertex  $\bullet$

Vertices  $\bullet \bullet$

Edge  $e$

Face



or



Our map has 4 vertices, 6 edges, and 4 faces. The following are maps of well-known cities and their attractions. Use the chart to list the number of vertices, edges, and faces for each map. Use your findings to discover the relationship between V, E, and F. Once you have found the relationship, fill in the blank on the last row.

	V	E	F
USC	4	6	4
Paris			
NYC			
Washington, D.C.	26	42	

