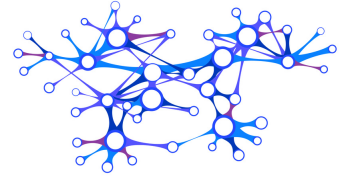


Level 3 Special Project

Graphs



Prerequisite Concepts	Concept 12
Key Concepts	Concept 15

The graph shown in Figure 1 consists of $16 * 4 + 1 = 65$ vertices and $16 * 4 = 64$ edges. It contains 1 centrally located vertex, c , and 64 peripheral vertices p_0, \dots, p_{63} . In this graph, c is connected to every peripheral vertex.

Write a Bricklayer program that creates a graph similar to the one shown in Figure 1. Before building this artifact it is recommended that you complete all Vitruvia exercises for Concept 15.

Hint: This graph can be constructed using techniques similar to those discussed in the second code-along associated with this special project (i.e., the special project on graphs). First, create an integer list consisting of the integers 0 through 15. Write 4 appropriate functions that, when applied to integer values, produce evenly spaced 2D coordinates which lie on the sides of a square. The length of the side of this square should be 121. Next, use the map function to create coordinates for each of the sides. Then use another map function to draw lines from c to each of these coordinates located on the sides of the square. And finally, use Bricklayer's *ringXZ* function to produce the circular shape.

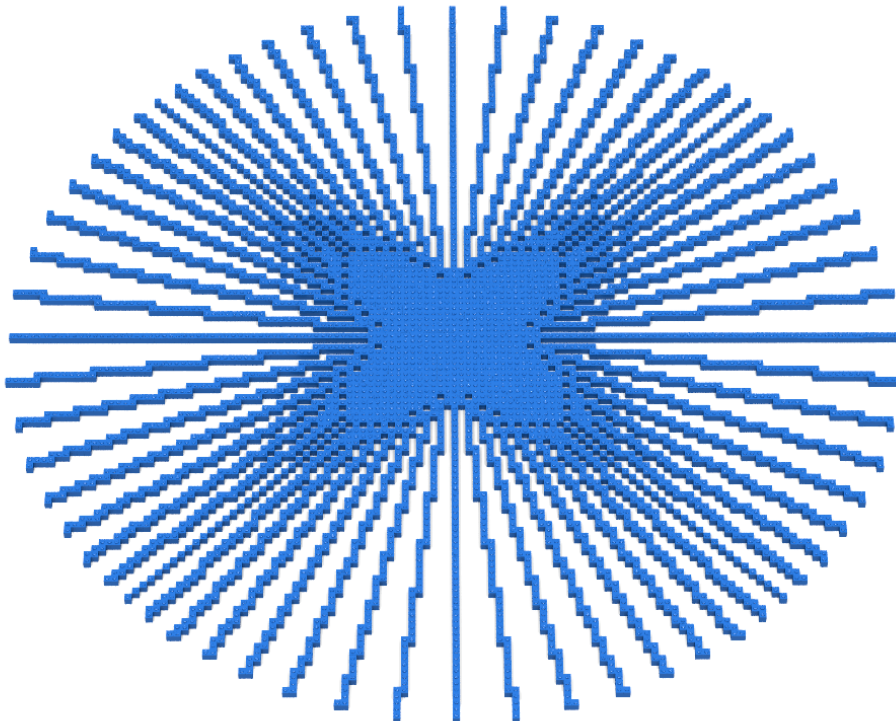


Figure 1: A graph with 65 vertices and 64 edges.

