

NAME _____

DATE _____

Module 20 Solving Problems Using Probability,
Statistics, and Discrete Math

Lesson 4 Solving Discrete Mathematics Problems



**guided
notes**

Lesson Objectives

- Determine if a graph is traversable.
- Find a traversable path.
- Determine if two graphs are equivalent.

A graph is a _____ of vertices and edges. Each point is a _____, and each segment or arc connecting the vertices is called an _____. An edge can be straight or curved.

The degree of a vertex is found by counting the number of edges _____ to it.

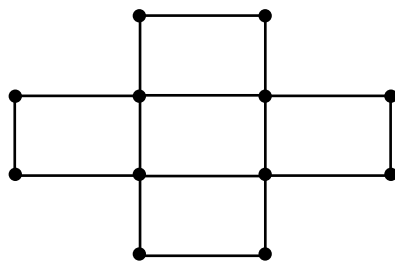
A graph is _____ if it has a path in which each edge can be traced _____. The traversable path is the shortest way to go to each of the vertices of the graph.

A graph is traversable if, and only if, either of the following is true. Each vertex has an _____ degree, or exactly _____ vertices have an odd degree.

When there are exactly two vertices with odd degree, those vertices are always the _____ of the traversable path.

When the degree of every vertex is _____, any point can be a starting or ending point of a traversable path.

Use the following graph for Questions 1 and 2. The graph shown represents a neighborhood. The edges represent the streets, and the vertices represent the intersections.

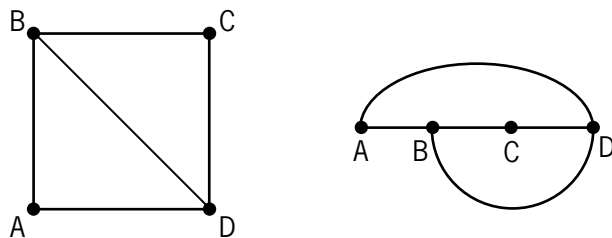


1 Find the degree of each vertex.

2 A student in the neighborhood is selling cookies from door to door. Is there a traversable path that would enable her to walk around the entire neighborhood without walking any part of a street more than once?

In equivalent graphs, the edges form the _____ of vertices.

3 Determine if the graphs are equivalent graphs.



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