OUTLINE FOR MTH1022 PRESENTATION ON *The Tantalizing Four Cubes*

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1. Introduction
2. Summary of the problem:
3. Number of possibilities
4. The difficulty of solving by hand
5. An example and how to solve
6. Overview of graph theory:

(introducing some basic terminology: vertex, degree, loop, edge, etc.)

Graph theory is a discipline within mathematics that handles the study of mathematical structures known as ***graphs***. A graph is defined as a series of related nodes, or ***vertices***, which represent entities or states within a given mathematical system. Relationships between vertices of a graph are represented by ***edges***, which are illustrated in a graph using lines or curves between a set of vertices. An edge which connects a vertex to itself is called a ***loop***. A vertex of a graph is said to have ***nth degree*** when said vertex contains n-number of edges connected to it.   
 The implied goal of employing a graph-theoretic approach to a given problem is to represent a set of data, and any relationships inherent within that set, in a more intuitive way, and to create a model of a problem in such a way that one may find more profound understanding of the features and characteristics governing the problem.

1. Our own examples:

* A case that does not work & why
* A case that works & why, how to solve it

1. Applications of this problem:   
   - travelling sales man, quantum computing
2. A computer program:

* A program that takes as input the pattern of colors on a set of four colored cubes and finds all solutions (if any exist)