NAME_____

GRAPH HANDOUT 2

In Graph Handout 1 you were asked to determine if each of the graphs pictured was traversable. Record your findings on this sheet in column 2 of the chart. Then go back to handout one and determine for each graph how many even vertices it contains and how many odd vertices it contains, and record that information here as well. Then use the chart to look for a pattern in order to determine in a way other than trial and error whether a graph is traversable or not. NOTE: A vertex is odd if it has an odd number of edges connecting to it, and it is even if it even if it has an even number of edges connecting to it.

GRAPH	**TRAVERSABLE? (Yes or No)**	**# of ODD vertices**	**# of EVEN vertices**	**Does is matter where you start?**
figure 1				
figure 2				
figure 3				
figure 4				
figure 5				
figure 6				
figure 7				
figure 8				
figure 9				
figure 10				
figure 11				
figure 12				

With the graphs you were working with on Graph Handout 1, you were using trial and error to decided if a graph was traversable or not. But there are problems with this method; not only is it tedious for complicated graphs, but unless you can be sure you've tried every possibility you can never be confident in saying a graph is not traversable.

Use the chart above to look for a pattern. Find a pattern that you can use to tell you whether a graph is traversable or not based only on this information and not on having to do trial and error.

Now look again at the pattern, if a graph is traversable, how can you tell whether or not where you start matters? And, if it does matter where you start, how can you tell where to start?

CHECK to see if your answers above work! Create your own graphs similar to the ones you've been working with; create different configurations of them with different numbers of even and odd vertices and see if your answers work. If so, congratulations! If not, rethink your answers and tweak them as needed.