Graph Theory Puzzles

<u>STAGE 1</u>

Draw a path from one dot to the other using steps that go up, down, left, or right. Diagonal steps are **NOT** allowed! The path must visit every square exactly once (every square must be visited, and no square may be visited more than once).

OR, explain why it is impossible to find a path described above.



<u>STAGE 2</u>

Draw a path from one **solid dot** to the other **solid dot**, and a second path from one **open dot** to the other **open dot**. Same rules as before. **Plus**, the two paths <u>cannot</u> cross! **OR**, explain why it is impossible to find a path described above.

\$			
		•	
		\$	
•			

◊		
	•	\$
•		

\$			
	•		
		\$	
•			

•	\diamond			
		•		
\$				

STAGE 3

This is almost the same as STAGE 2, but now you may pretend you are playing Ms. Pac Man. In other words, you may exit one side of the board and reenter into the square directly opposite.

•	٥	
	•	



٥			
	•	◊	
•			

٠	٠	
	\$	



•	•	
	٥	