



**CALIFORNIA STATE SCIENCE FAIR
2006 PROJECT SUMMARY**

| | |
|--|---------------------------------------|
| Name(s) Kaelin Swift | Project Number J1225 |
| Project Title The Planar Isometries of Polygons | |
| Abstract Objectives/Goals In this project, the planar isometries of polygons are characterized by their graph structure. It is shown that the reflections and rotations are the only possible planar isometries. A geometric proof of Langrange's Theorum is given. Methods/Materials Analytic and geometric methods are used to study and characterize the planar isometries of polygons. Results I found that the only possible isometries where rotations and reflections. Conclusions/Discussion The project concludes that the only possible isometries are rotations and reflections. | |
| Summary Statement This project characterizes the planar isometries of polygons as rotations and reflections. | |
| Help Received Father helped prepare display board. I received some minimal advise from Dr. J. Gani of the Australian National University. | |