Transformations Discovery Activity Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Use a graphing calculator or software to complete the following. Sketch all graphs onto the coordinate planes provided.

|  |  |  |
| --- | --- | --- |
| Set A | Set B | Set C |
|  |  |  |
| Given the function what effect does adding a constant term to a parent function have on the graph of the function? Be specific about the direction in which the graph moves and what seems to make it move in that direction.  |
| Set D | Set E | Set F |
|  |  |  |
| In the equation , what effect does adding seem to have on the graph of the function? Be specific about the direction in which the graph moves and what seems to make it move in that direction. How are these moves different from those of sets A – C? |
| Set G | Set H | Set I |
|  |  |  |
| In the equation , what effect does multiplying by seem to have on the graph of the function? Be specific about how the graph changes and what seems to make it change in one direction or another. How are these moves different from those of sets A – C and D = F? |
| Set J | Set K | Set L |
|  |  |  |
| In the equation , what effect does multiplying by seem to have on the graph of the function? Be specific about how the graph changes and what seems to make it change in one direction or another. How are these moves ALIKE and DIFFERENT from those of sets G – I? |
| Summarize your conclusions about the effects of each variable in the transformation of a function . |
| **For the sets below, compare each graph in Set M with the corresponding graph in Set N.** |
| Set M | Set N |
|  |  |
| Compare the equations . What do you notice about these graphs?  |

Project: Summarize your findings from this activity in a presentation. Work with your partner. Make one page for each type of transformation. Then make up an equation that has all four types of transformations.