

Snowflakes have a symmetrical shape that often follows a simple pattern that is replicated to form the full shape that you see.

Problem 1 - Graph the following points to make a design in the First Quadrant:
$(10,0),(10,2),(6,2),(6,0),(4,2),(0,0),(4,3),(3,5),(5,4),(6,7),(3,9),(1,6),(3,5)$,
$(1,4),(0,0)$
Problem 2 - Connect the points with line segments in the order given.
Problem 3 - Reflect the pattern that you drew into the Second Quadrant, then complete the pattern in Quadrants Three and Four to form the full snowflake shape!

Problem 1 and 2 -


Problem 3 - Students may either place 'mirrors along the $X$ and $Y$ axis and redraw the shape in the First Quadrant, or use the following symmetry idea: To reflect the figure into Quadrant Two, plot the points in Quadrant One with the sign of the x coordinates replaced by their negative: $(x, y)$ becomes $(-x, y)$. For Quadrant Three use ( $x, y$ ) becomes $(-x,-y)$ and for Quadrant Four ( $x, y$ ) becomes $(x,-y)$. The full figure is shown below:


