

Worksheet

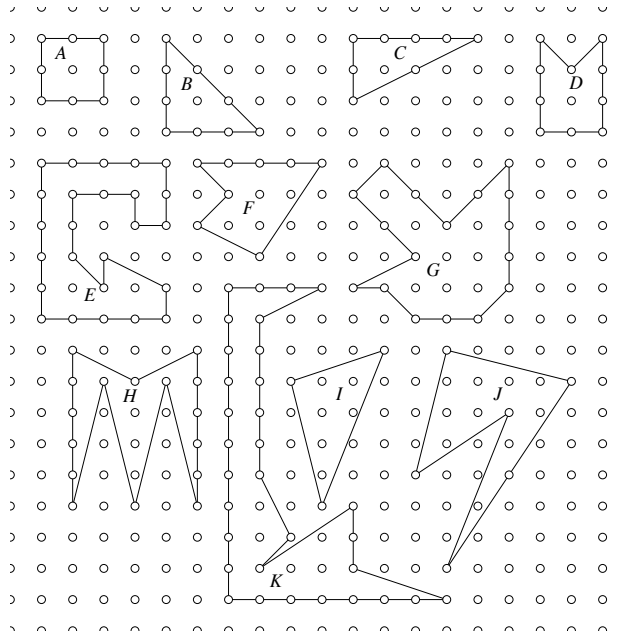


Figure 6: Lattice Polygons

Directions: Assume that the horizontal and vertical distances between adjacent dots is one unit. For each of the polygons in Figure 6, calculate the area, count the number of dots on the boundary of the polygon, and count the number in the interior. Place these numbers in the table below. As an example, the results for polygon *A* have already been entered in the table. **Hint:** One way to calculate the areas of the more complex figures is to subdivide them into areas that you can calculate.

| | Polygon Area | Interior Points | Boundary Points |
|----------|--------------|-----------------|-----------------|
| <i>A</i> | 4 | 1 | 8 |
| <i>B</i> | | | |
| <i>C</i> | | | |
| <i>D</i> | | | |
| <i>E</i> | | | |
| <i>F</i> | | | |
| <i>G</i> | | | |
| <i>H</i> | | | |
| <i>I</i> | | | |
| <i>J</i> | | | |
| <i>K</i> | | | |

For more information on Pick's Theorem, see:

<http://www.geometer.org/mathcircles/pick.pdf>

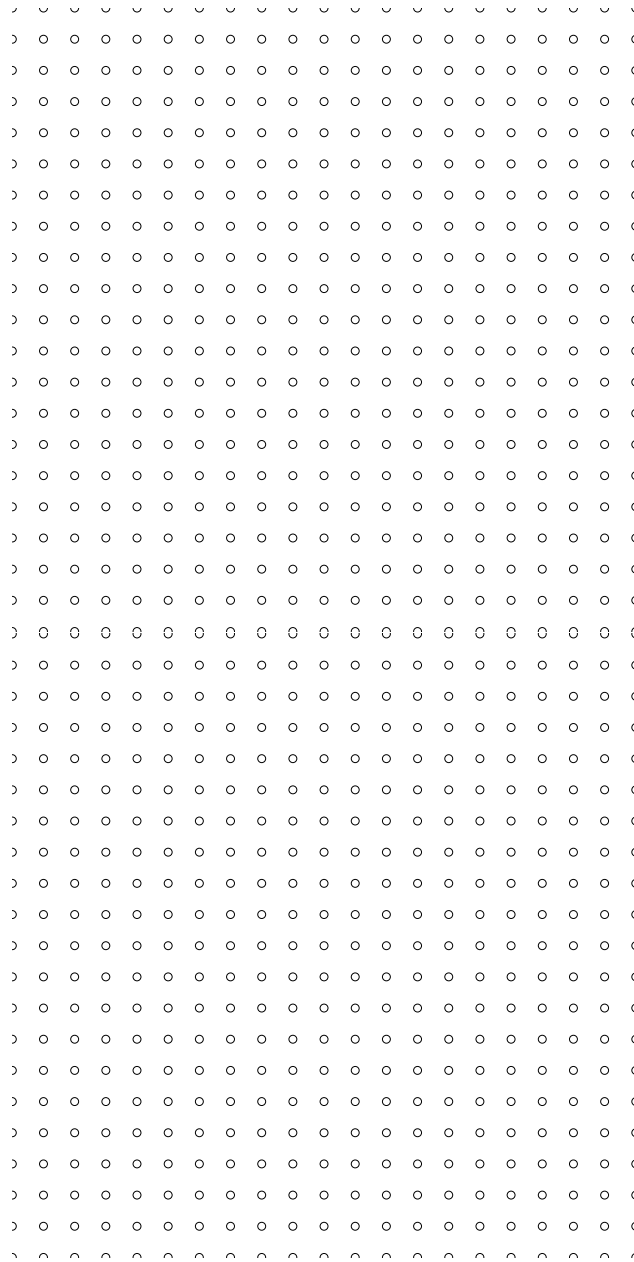


Figure 7: Grid for Lattice Polygons