

MathFLIX CHALLENGE

Area of Irregular Polygons: Pick's Theorem

In 1899, mathematician Georg Pick published an intriguing theorem for finding the area of irregular polygons. For any polygon with vertices on a grid, the area of the polygon can be found using the number of grid points on the boundary and the number of grid points inside the polygon.

On the grid below, use Pick's theorem to find the area of the shapes given as well as your own shapes. Color polygons with an area less than 6 red. Color polygons with an area equal to 6 yellow. Color polygons with an area greater than 6 blue.

PICK'S THEOREM

$$A = \frac{1}{2}B + \text{Int} - 1$$

A = area of figure
 B = # of dots on the perimeter
 Int = # of dots in the interior of the polygon

1 B = 10

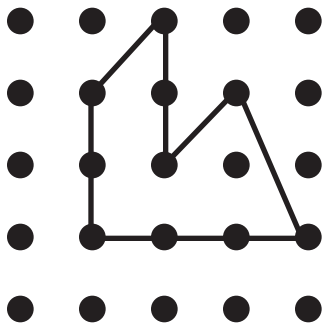
2 Int = 2

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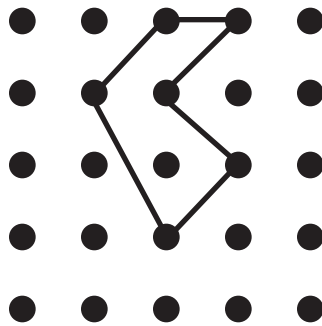
3 $A = \frac{1}{2}(10) + 2 - 1$

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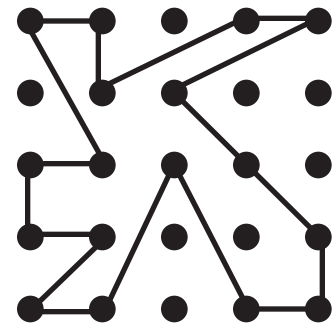
4 A = 6



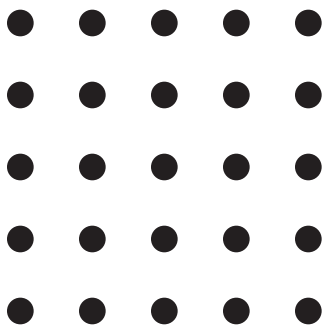
Area= _____



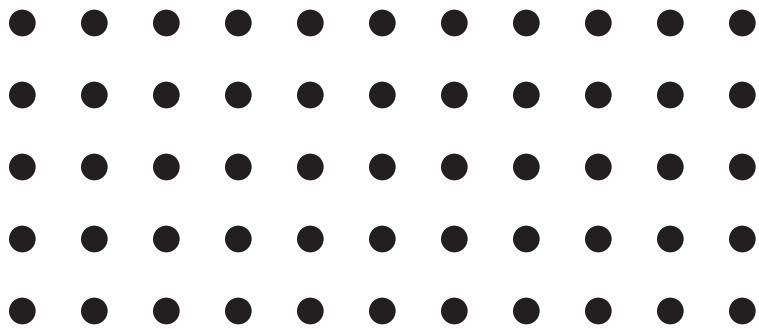
Area= _____



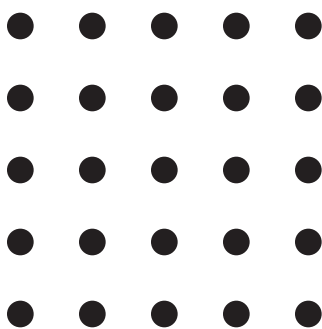
Area= _____



Area= _____



Area= _____



Area= _____