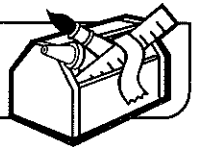


**PROJECT
7****Finding Areas with Pick's Formula**

Read the paragraphs below, and then use Pick's Formula to find the areas of the polygons on the previous page. Record your results in the table below. Compare them to the results you recorded in the table on the previous page. You should expect some differences—measures are always estimates.

Pick's Formula for Finding Polygon Areas by Counting

In 1899, Georg Pick, an Austrian mathematician, discovered a formula for finding the area of a polygon on a square grid (such as graph paper). If a polygon has its vertices at grid points, its area can be found by counting the number of grid points on the polygon (P) and the number of grid points in the interior of the polygon (I) and then by using the formula $A = (\frac{1}{2} * P) + I - 1$. The unit of area is one square on the grid.

For figure B on the previous page, the unit of area is cm^2 .

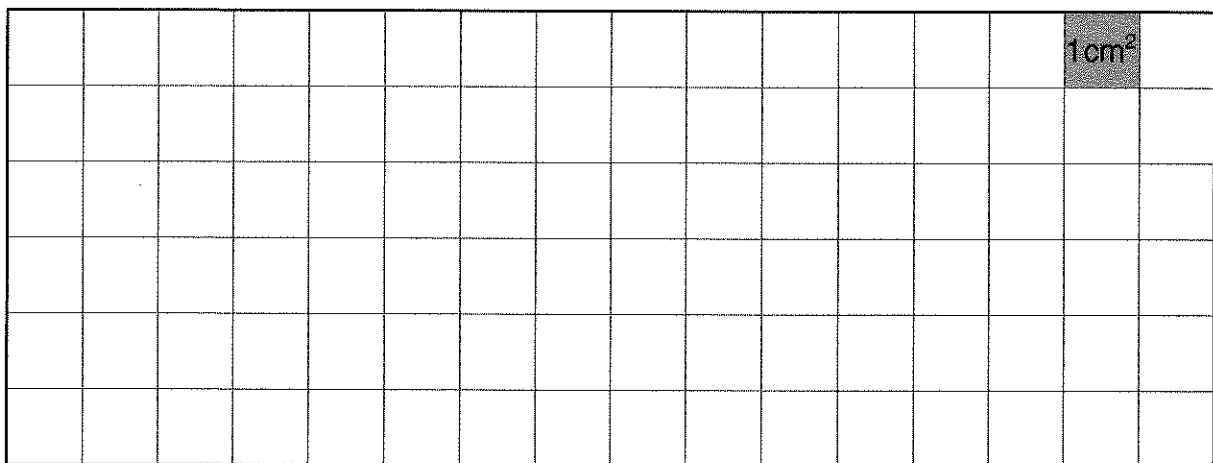
$$P = 4 \text{ (grid points on polygon)}$$

$$I = 12 \text{ (grid points in interior)}$$

$$\begin{aligned} A &= (\frac{1}{2} * P) + I - 1 \\ &= (\frac{1}{2} * 4) + 12 - 1 \\ &= 13 \text{ cm}^2 \end{aligned}$$

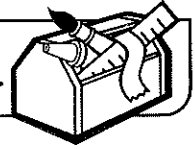
Figure	P	I	Area = $(\frac{1}{2} * P) + I - 1$
A			cm^2
B			cm^2
C			cm^2
D			cm^2
E			cm^2
F			cm^2

Draw two polygons. Be sure that the vertices are at grid points. Use Pick's Formula to find the areas of the polygons.



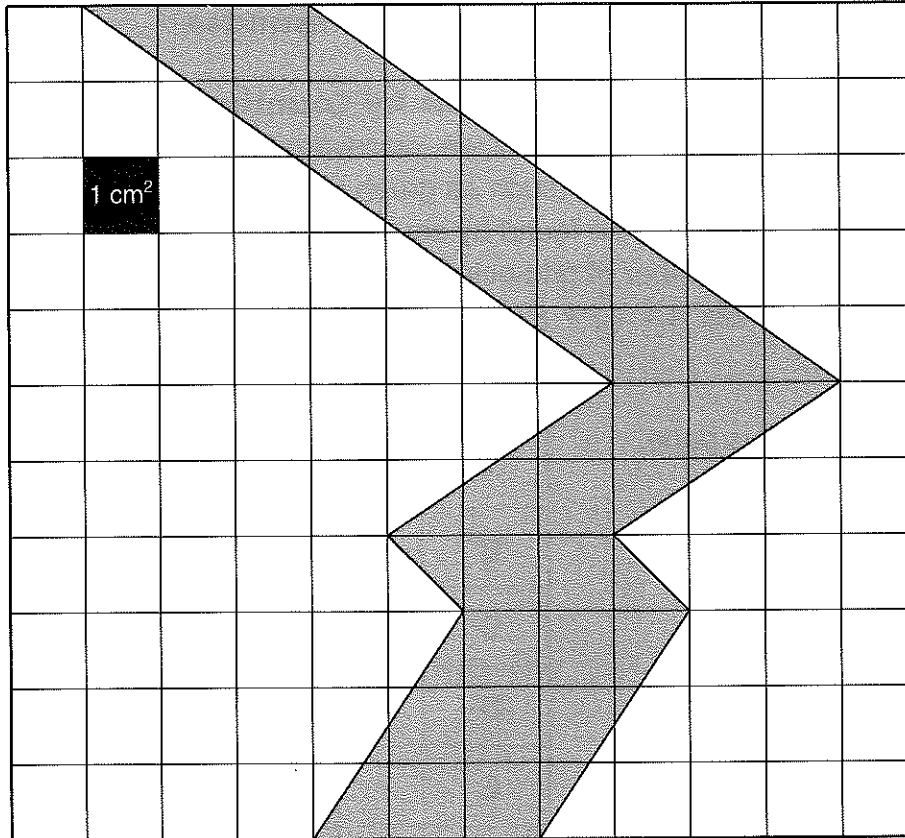
Area: _____

Area: _____

PROJECT
7
Finding Areas with Pick's Formula *cont.*


You might have found the area of this shaded path in Lesson 9-6.

Now use Pick's Formula to find the area.



- The area of the path is _____ cm^2 .
- Do you think Pick's Formula is a good way to find this area? _____

Explain. _____

