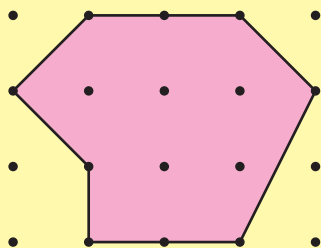


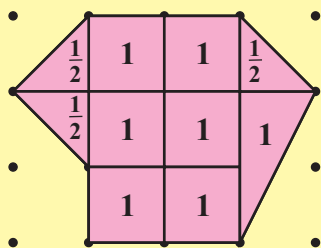
Pick's Rule Answers

In 1899, George Pick discovered a rule that can be used to find the area of shapes drawn on dot paper. Find the area of the shapes drawn on this 1 cm square dot paper and record them in the table below.

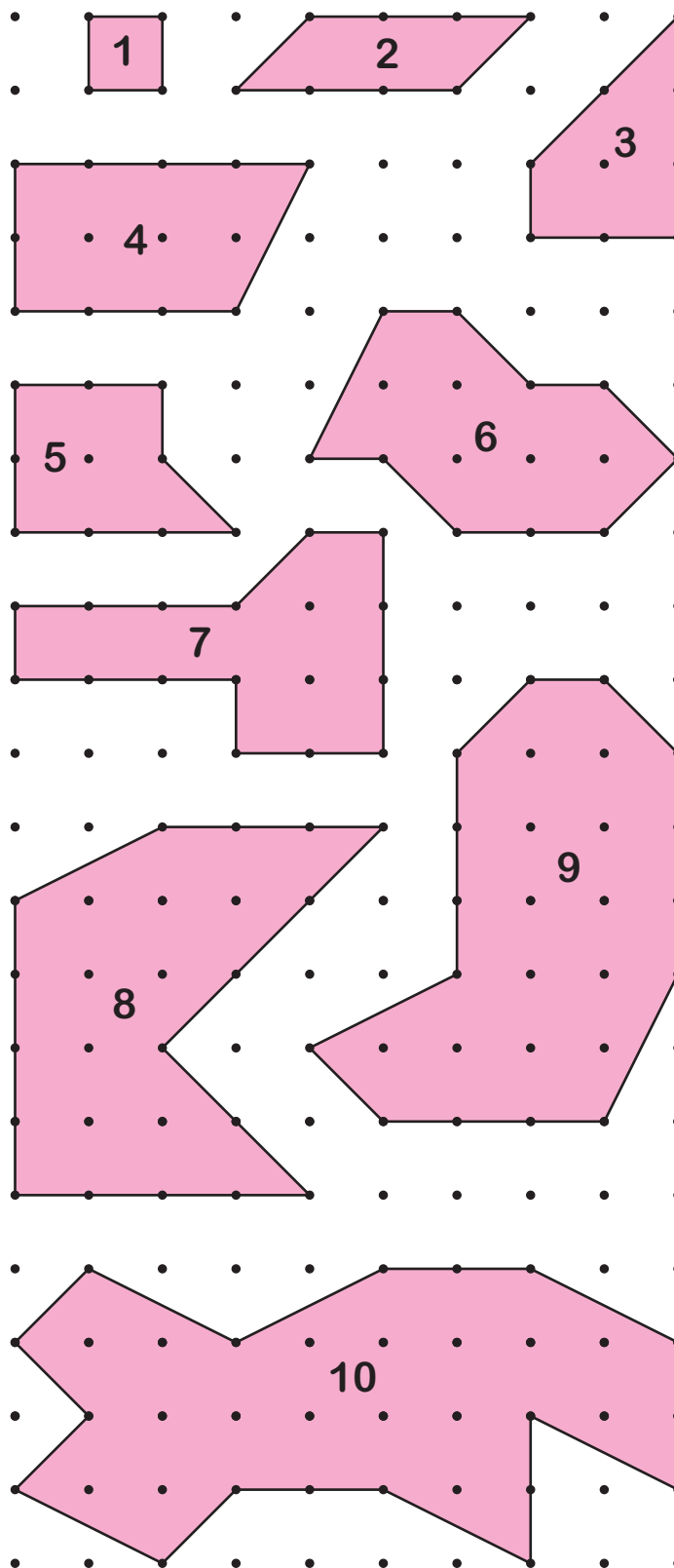
Example



The area of this shape can be found by dividing it into squares and triangles



$$\text{Area} = 8\frac{1}{2} \text{ cm}^2$$



Shape	Area (cm ²)
1	1
2	3
3	4
4	7
5	4.5
6	9
7	8.5
8	15.5
9	18.5
10	24

Pick's Rule Answers

Complete the table below for the shapes on the previous page where:

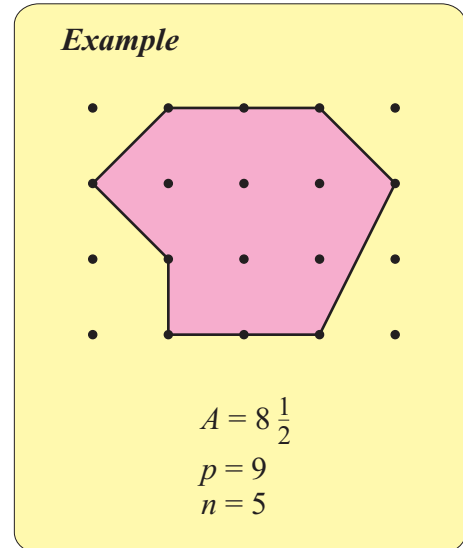
A = the area of the shape

p = the number of points on the border of the shape

n = the number of points inside the shape

Shape	A	p	n
1	1	4	0
2	3	8	0
3	4	8	1
4	7	10	3
5	4.5	9	1
6	9	10	5
7	8.5	15	2
8	15.5	17	8
9	18.5	15	12
10	24	18	16

Example



Using the information in this table, try to find a rule relating the area of a shape (A) to the number of points on its border (p) and number of points inside the shape (n).

$$A = \frac{p}{2} + n - 1$$

This is called **PICK'S RULE**.

Using this rule, what would be the area of a shape with 12 dots on its border and 3 dots inside it?

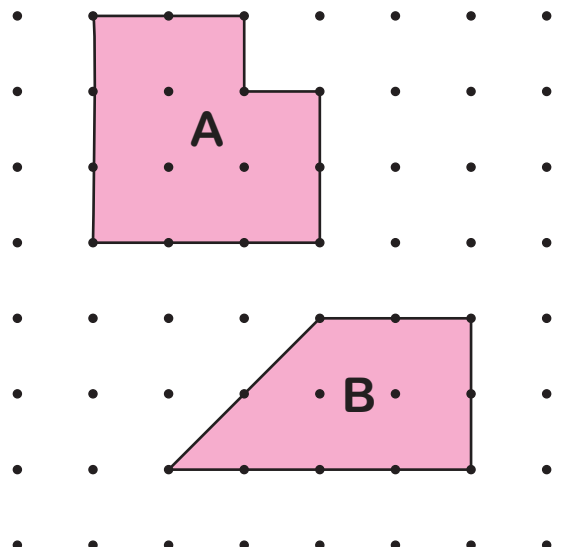
8

Draw this shape on the dot grid and label it shape **A**.

Use the rule to find the area of a shape with 10 dots on its border and 2 dots inside it.

6

Draw this shape on the dot grid and label it shape **B**.



Pick's Rule Answers

Use Pick's Rule to complete this table and draw the shapes on the dot grid below.

<i>Shape</i>	<i>A</i>	<i>p</i>	<i>n</i>
C	2	6	0
D	8	12	3
E	5	8	2
F	4.5	9	1
G	3.5	7	1
H	7.5	11	3
I	9	12	4
J	8	12	3
K	8	16	1

These are examples - there may be others

