

# Line Symmetry.pps

## Teacher's Notes and Pupils' Activities

These notes and activities are to accompany the PowerPoint presentation *Line Symmetry.pps* which is available as a free download from [www.numeracysoftware.com](http://www.numeracysoftware.com)

### **Activity Sheet 1: Line Symmetry in the Alphabet**

Give out this sheet to pupils when you get to the appropriate slide in the presentation. When they have completed the sheet, discuss it with them and then continue with the presentation.

### **Activity Sheet 2: Line Symmetry in Road Signs**

Give out this sheet to pupils when you get to the appropriate slide in the presentation. When they have completed the sheet, discuss it with them and then continue with the presentation.

### **Activity Sheet 3: Pentominoes**

I really this activity should be done before you start to look at line symmetry using the presentation. It is an excellent investigative shape and space activity because it begs the important question "What do we mean by different?". When recording their pentominoes, many pupils will draw duplicates, one being a rotation and/or reflection of the other. It is important for pupils to appreciate that these are the SAME shape but in a DIFFERENT position.

### **Activity Sheet 4: Line Symmetry with Pentominoes**

Give out this sheet to pupils when you get to the appropriate slide in the presentation. When they have completed the sheet, continue with the presentation. When you get to the sorting diagram, ask pupils to tell you where each pentomino belongs.

### **Activity Sheets 5 and 6: Seven-Pin Polygons**

Ideally this activity should be done before you start to look at line symmetry using the presentation. Like pentominoes, it is an excellent investigative shape and space activity because again it begs the important question "What do we mean by different?". When recording their pentominoes, many pupils will draw duplicates, one being a rotation and/or reflection of the other. It is important for pupils to appreciate that these are the SAME shape but in a DIFFERENT position. It is also a useful activity because it generates several named mathematical shapes e.g. equilateral triangle, isosceles triangle, right-angled triangle, rectangle, rhombus, trapezium, kite, hexagon.

### **Activity Sheet 7: Line Symmetry with Seven-Pin Polygons**

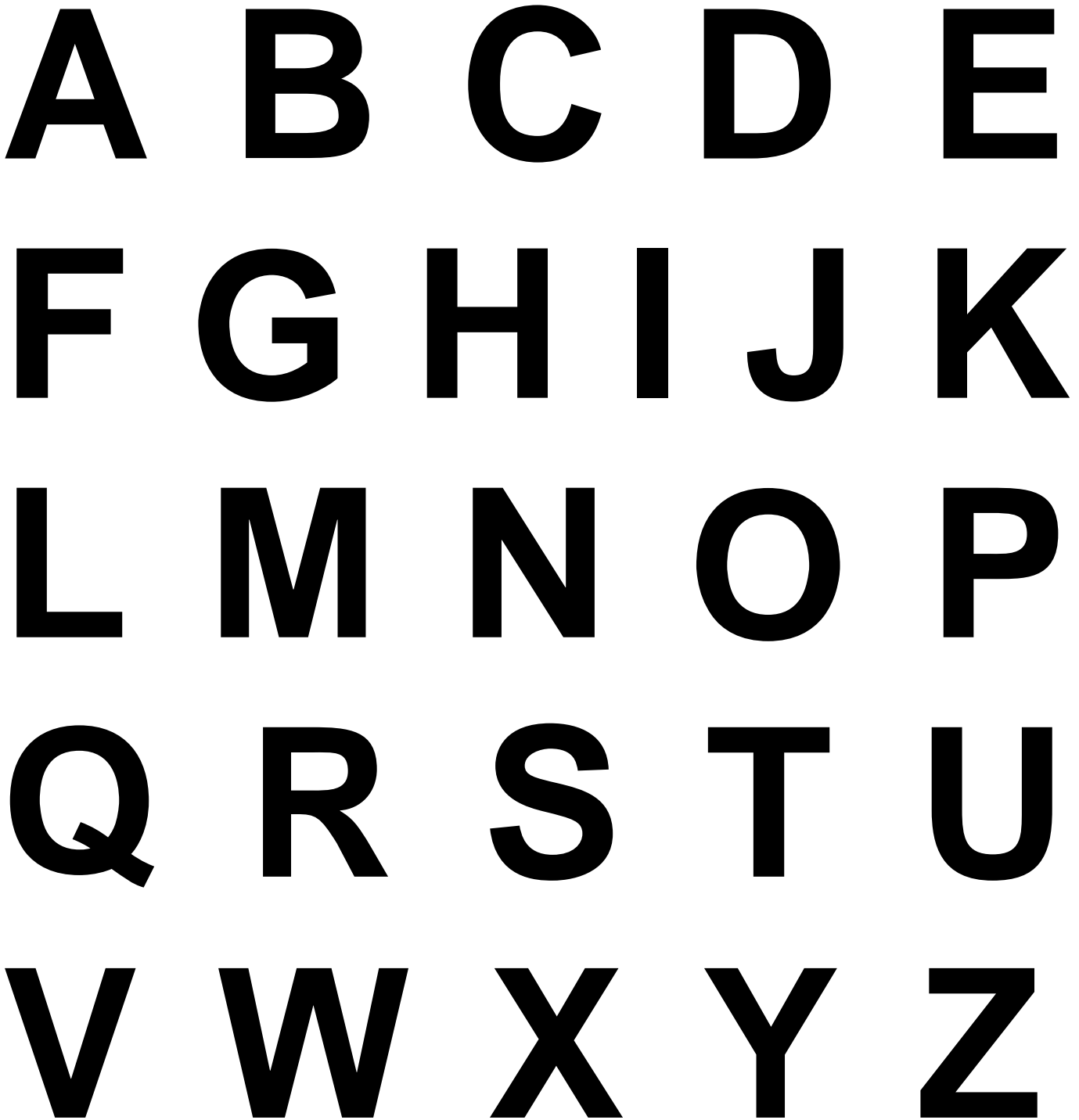
Give out this sheet to pupils when you get to the appropriate slide in the presentation. When they have completed the sheet, continue with the presentation. When you get to the sorting diagram, ask pupils to tell you where each seven-pin polygon belongs.

Name.....

## Line Symmetry in the Alphabet

Which letters of the alphabet have lines of symmetry?

Draw the lines of symmetry on the letters below.



Name.....

## Line Symmetry in Road Signs

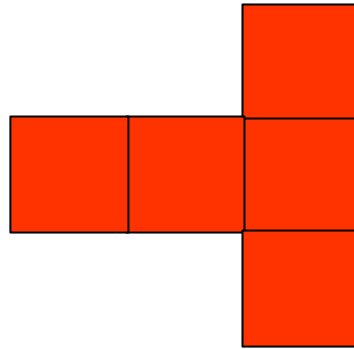
Draw the lines of symmetry on the road signs below.



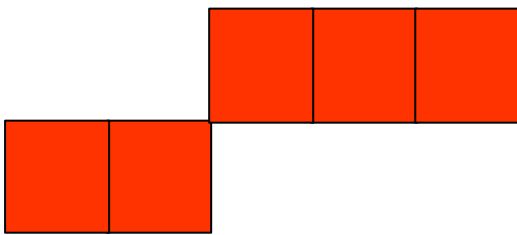
# Pentominoes

A pentomino is made out of five squares that are connected along at least one edge.

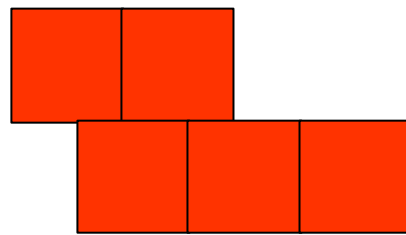
Here is an example of a pentomino.



These are NOT pentominoes.



Two of the squares are not connected along an edge.



The squares must be connected along a complete edge

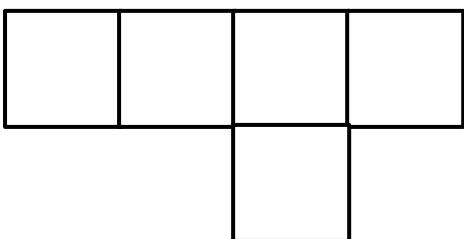
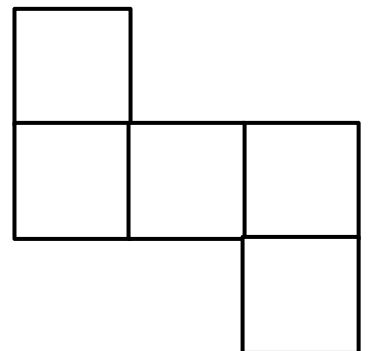
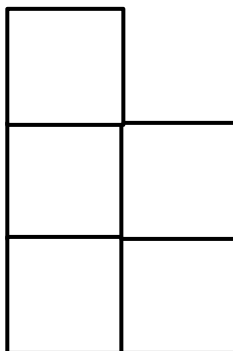
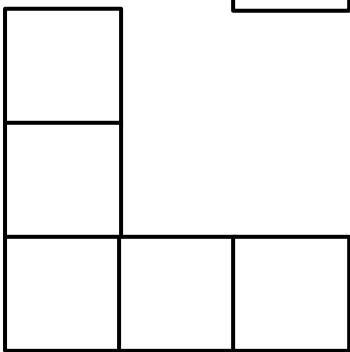
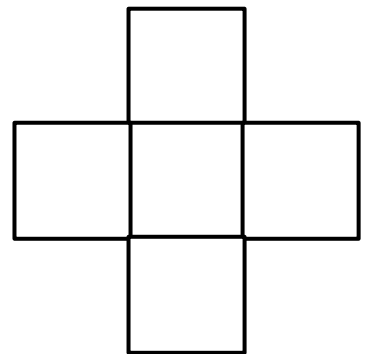
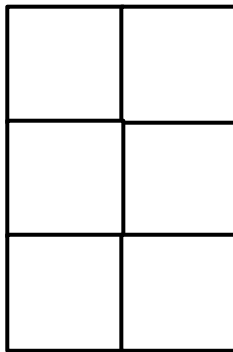
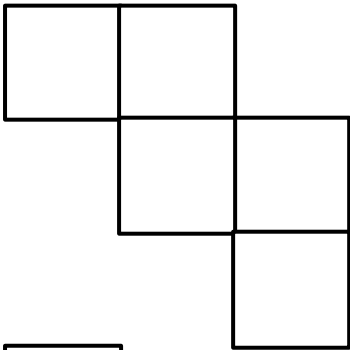
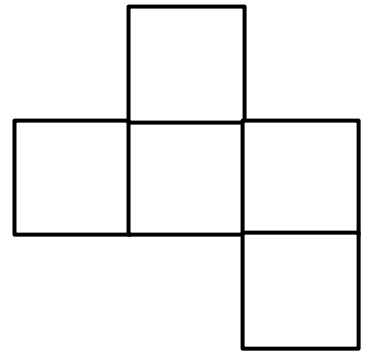
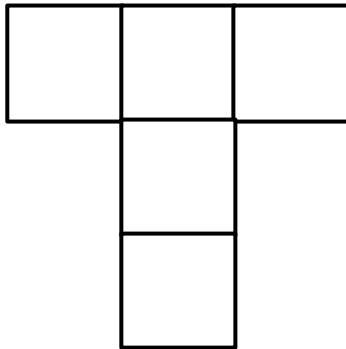
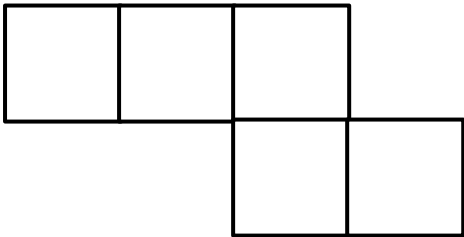
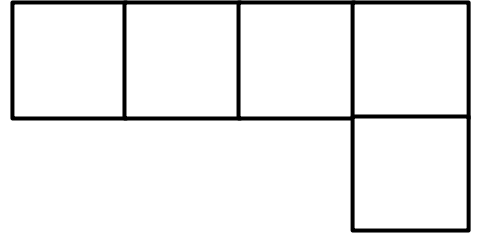
How many different pentominoes can you draw?

Record them on squared paper or square spotty paper.

Name.....

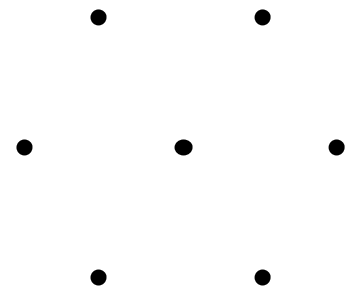
## Line Symmetry in the Pentominoes

Draw the lines of symmetry on the pentominoes below.



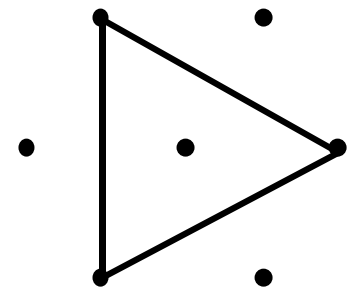
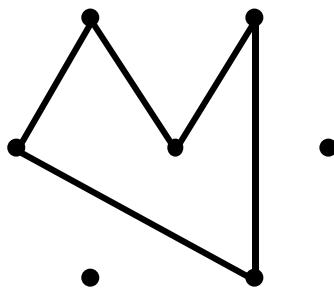
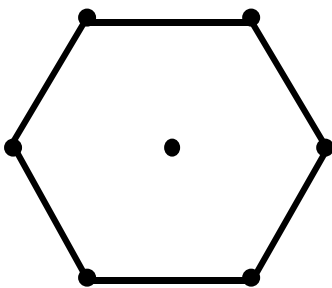
# Seven Pin Polygons

Here is a hexagonal arrangement of seven dots.

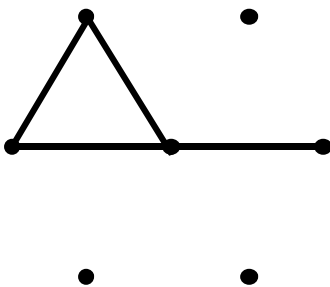


A seven-pin-polygon is a closed shape made by joining the pins with straight lines.

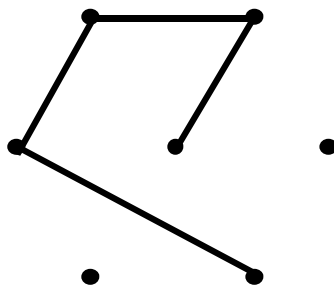
Here are three examples of seven-pin-polygons.



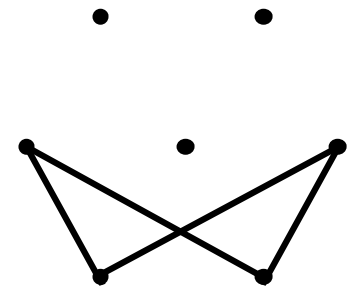
Here are three examples which are **not** seven-pin-polygons.



This one has got an extra line sticking out of it



This one is not a closed shape

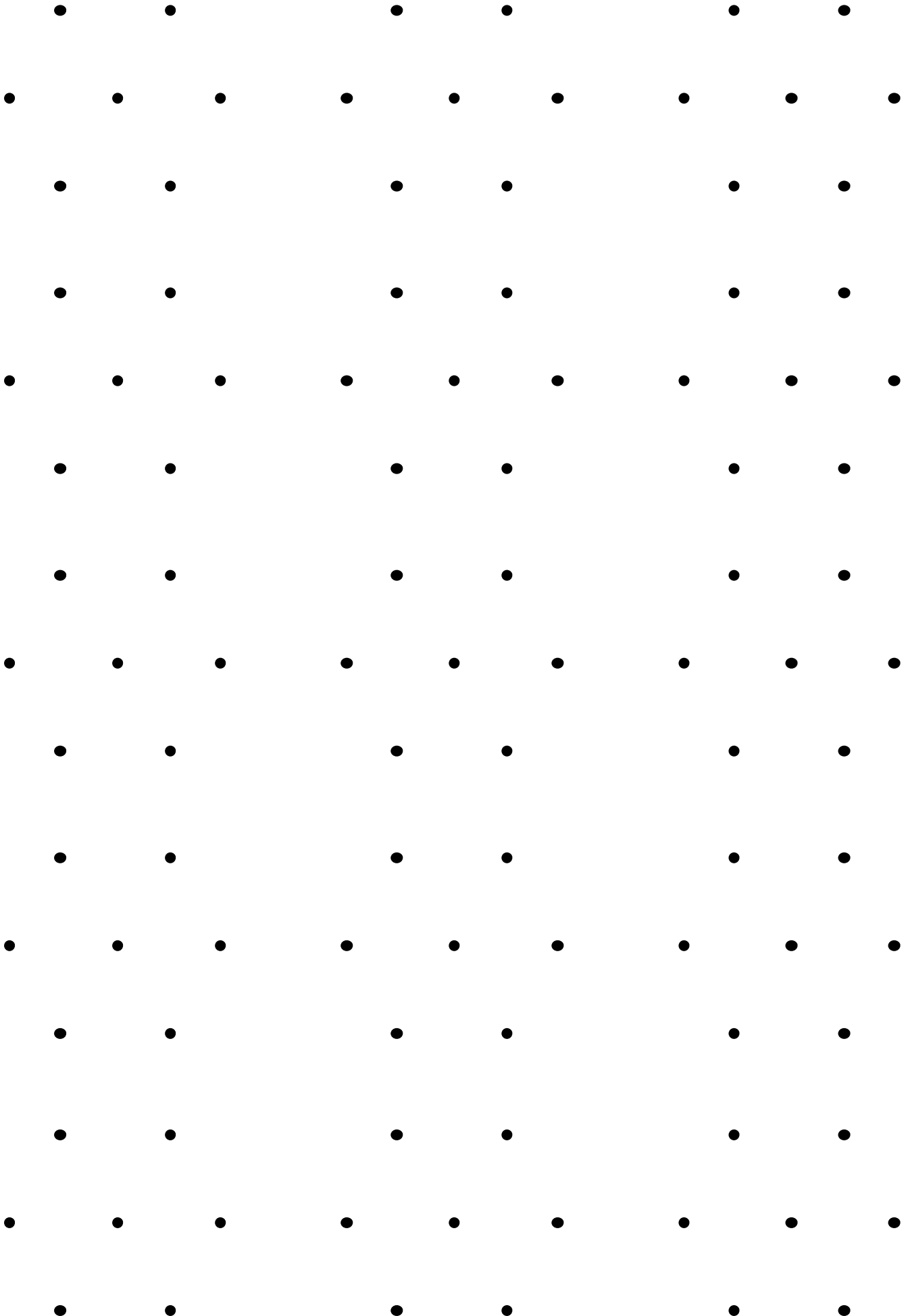


This one is made from two shapes and one of the corners is not on a pin

How many different seven-pin-polygons can you make?

Record them on the sheet provided.

Name.....



Name.....

## Line Symmetry in the Seven Pin Polygons

Draw the lines of symmetry on the Seven Pin Polygons below.

