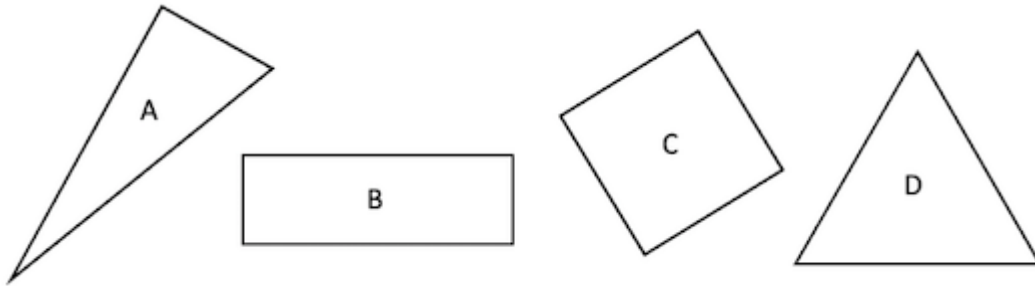


Data Duos

Age 7 to 11
Challenge Level

Here are four shapes (they are labelled A, B, C and D):

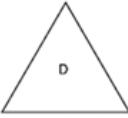
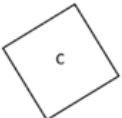
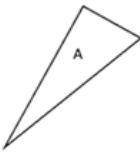

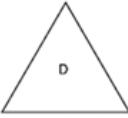
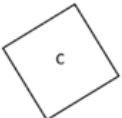
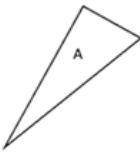

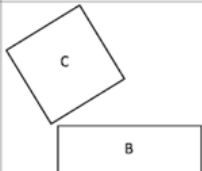
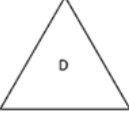
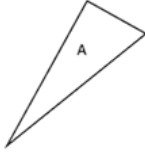
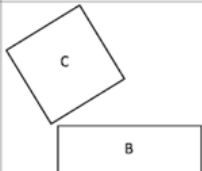
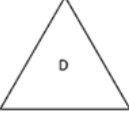
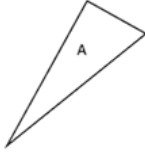
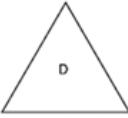
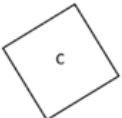
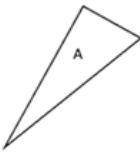

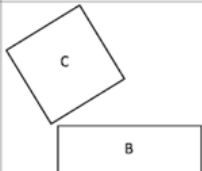
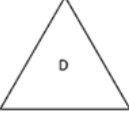
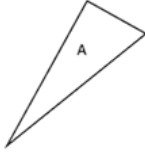
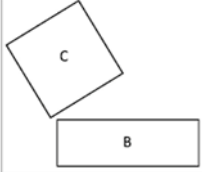
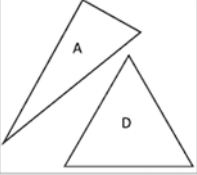
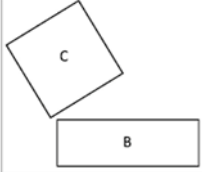
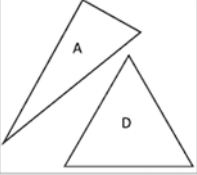
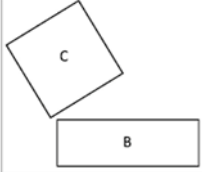
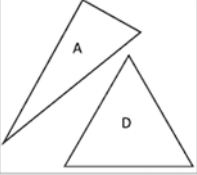


What do you notice?

In how many different ways could you sort the shapes?

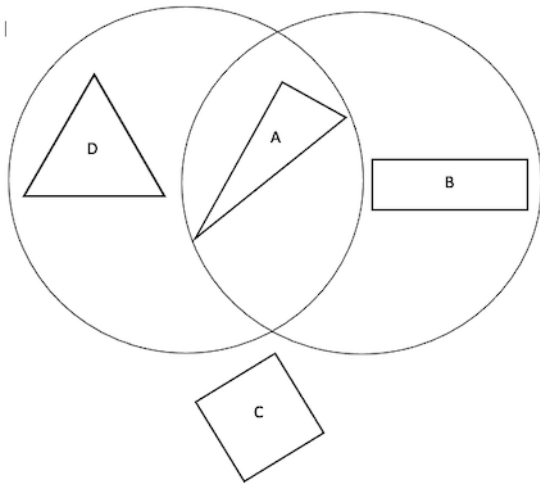
Kerstin sorts the shapes in three different ways.
She creates a Venn diagram and a Carroll diagram for each way of sorting.

Here are the three Carroll diagrams she makes...

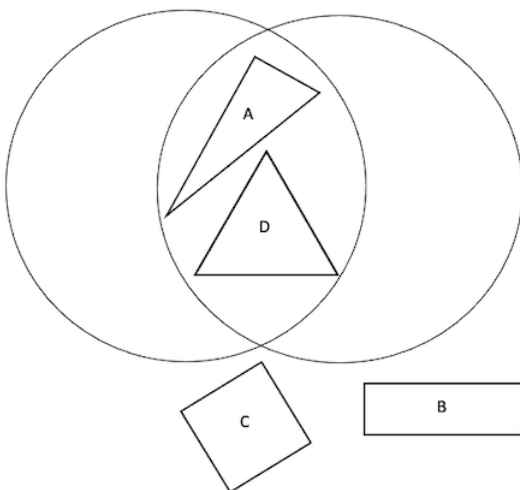
<p>Carroll number 1:</p> <table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <thead> <tr> <th style="width: 15%;"></th> <th style="width: 35%;">Triangle</th> <th style="width: 35%;">Not triangle</th> </tr> </thead> <tbody> <tr> <th style="width: 15%;">Regular</th> <td></td> <td></td> </tr> <tr> <th style="width: 15%;">Irregular</th> <td></td> <td></td> </tr> </tbody> </table>		Triangle	Not triangle	Regular			Irregular			<p>Carroll number 2:</p> <table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <thead> <tr> <th style="width: 15%;"></th> <th style="width: 35%;">Has at least one right angle</th> <th style="width: 35%;">Has no right angles</th> </tr> </thead> <tbody> <tr> <th style="width: 15%;">Has at least one line of symmetry</th> <td></td> <td></td> </tr> <tr> <th style="width: 15%;">Has no lines of symmetry</th> <td></td> <td></td> </tr> </tbody> </table>		Has at least one right angle	Has no right angles	Has at least one line of symmetry			Has no lines of symmetry		
	Triangle	Not triangle																	
Regular																			
Irregular																			
	Has at least one right angle	Has no right angles																	
Has at least one line of symmetry																			
Has no lines of symmetry																			
<p>Carroll number 3:</p> <table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <thead> <tr> <th style="width: 15%;"></th> <th style="width: 35%;">Has at least one acute angle</th> <th style="width: 35%;">Has no acute angles</th> </tr> </thead> <tbody> <tr> <th style="width: 15%;">Quadrilateral</th> <td></td> <td></td> </tr> <tr> <th style="width: 15%;">Not quadrilateral</th> <td></td> <td></td> </tr> </tbody> </table>		Has at least one acute angle	Has no acute angles	Quadrilateral			Not quadrilateral												
	Has at least one acute angle	Has no acute angles																	
Quadrilateral																			
Not quadrilateral																			

Here are the three Venn diagrams, but she hasn't labelled them yet.

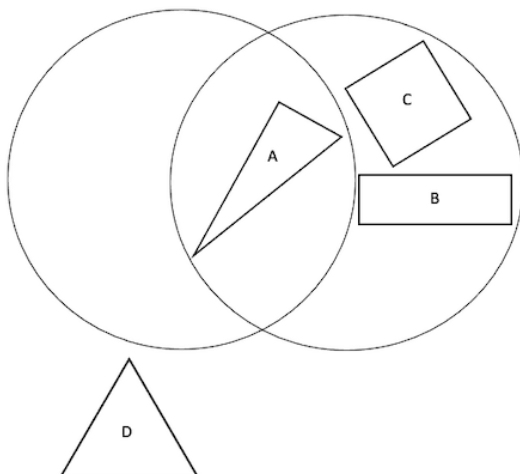
Venn number 1:



Venn number 2:



Venn number 3:



Can you match the Carroll diagram to the Venn diagram showing the same way of sorting the shapes?

Can you add labels to each Venn diagram?

We would love to hear about how you approached this task.

You may find it helpful to print out [this sheet](#) which has copies of all six diagrams on it.

This task was inspired by a 2009 SATs question.