matRiks

An R package for the automatic generation of Raven-like matrices

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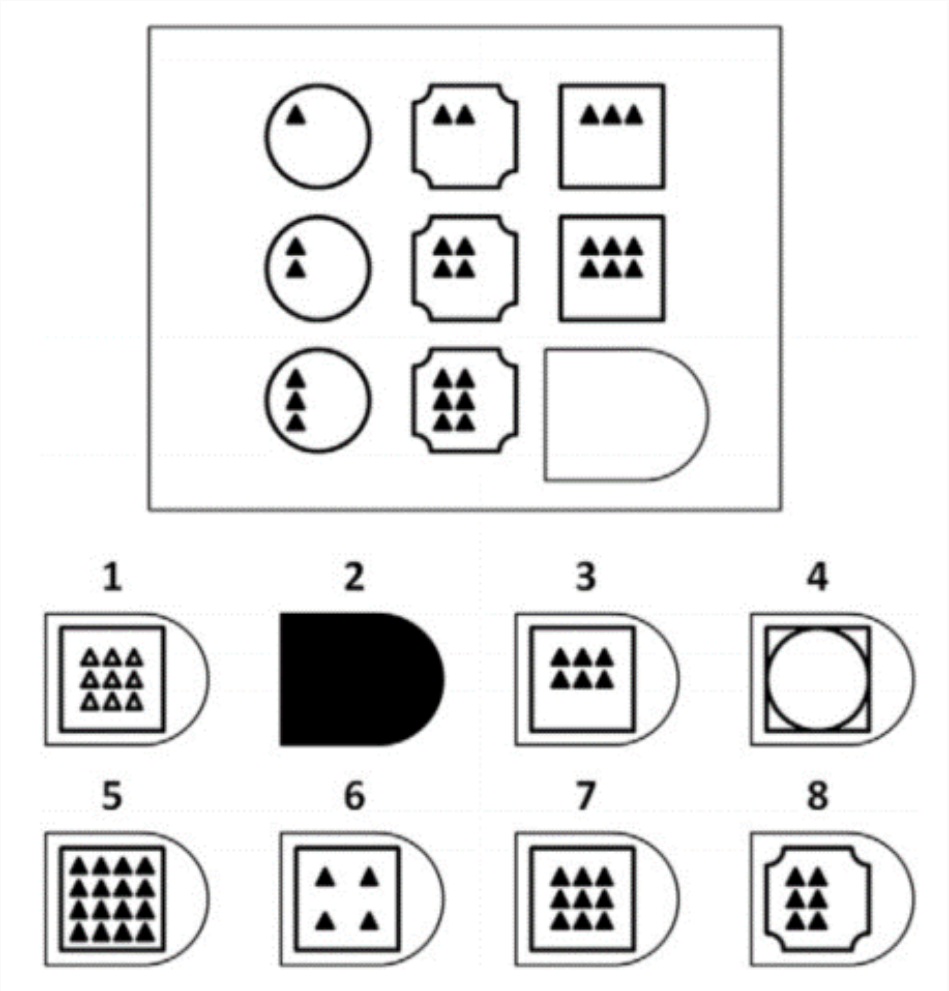
Universty of Padova, IT

Meeting of European Mathematical Psychology Group, 2023

Assessment of fluid intelligence or abstract reasoning

Job recruitment, clinical assessment

An example



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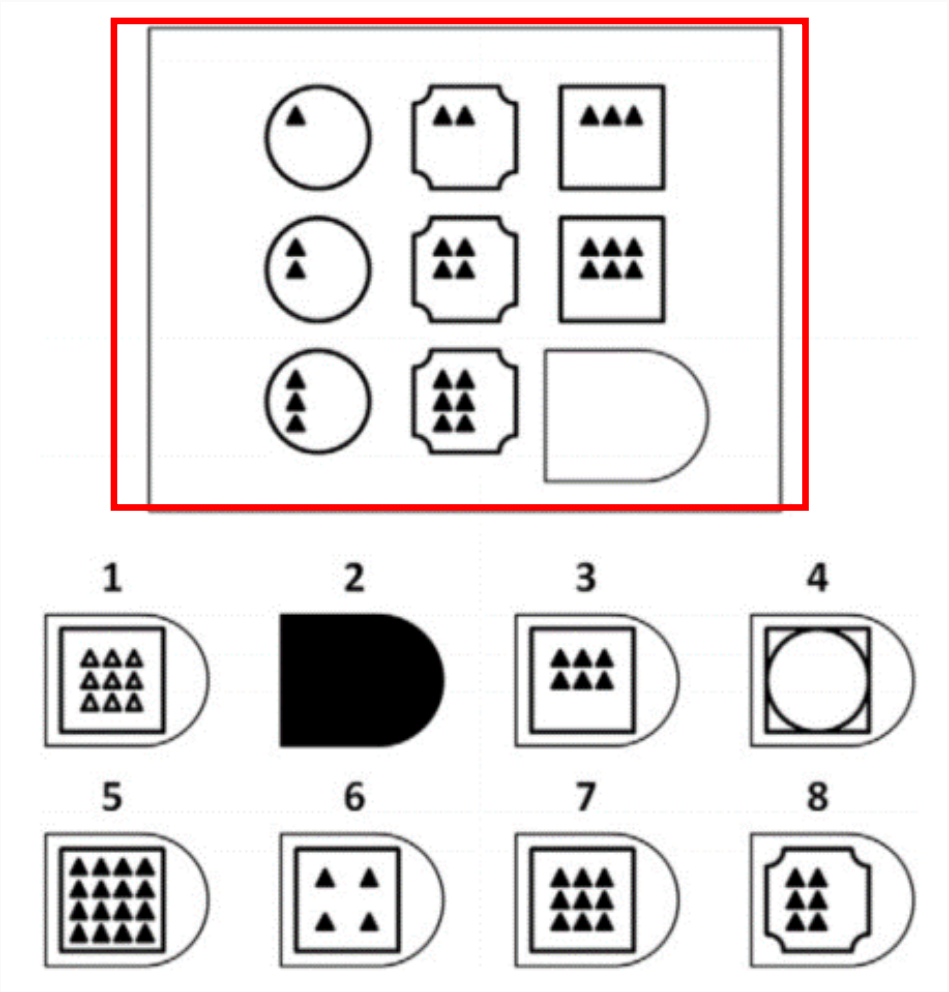

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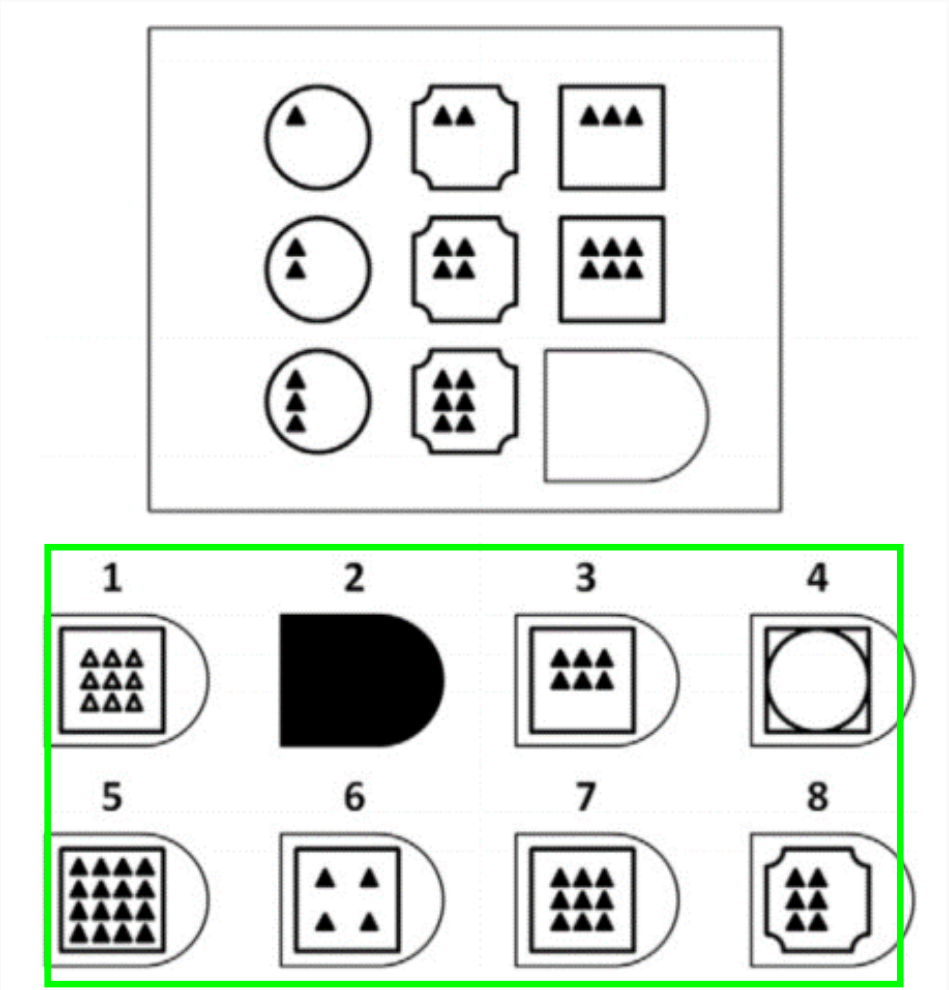
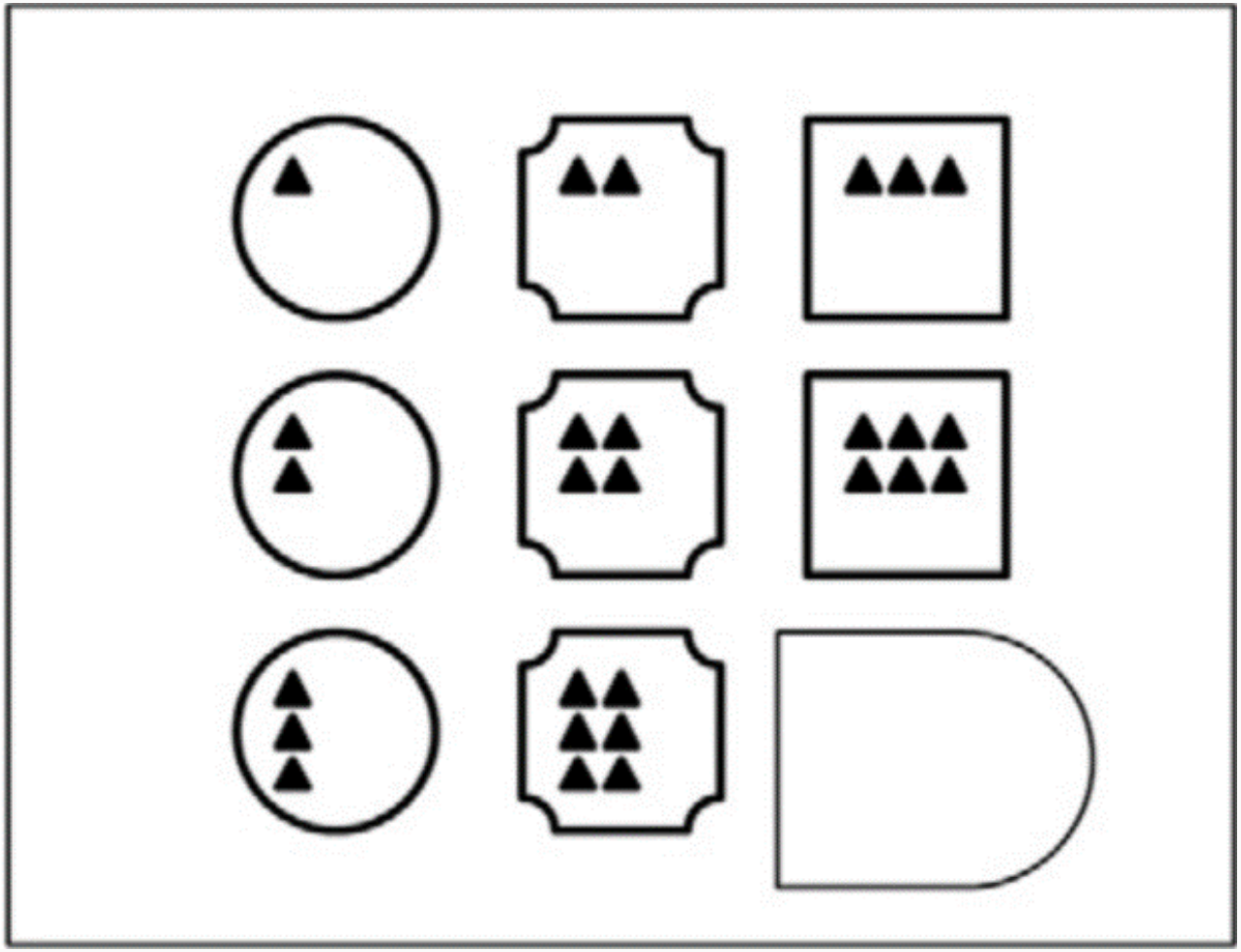


An example: The matrix



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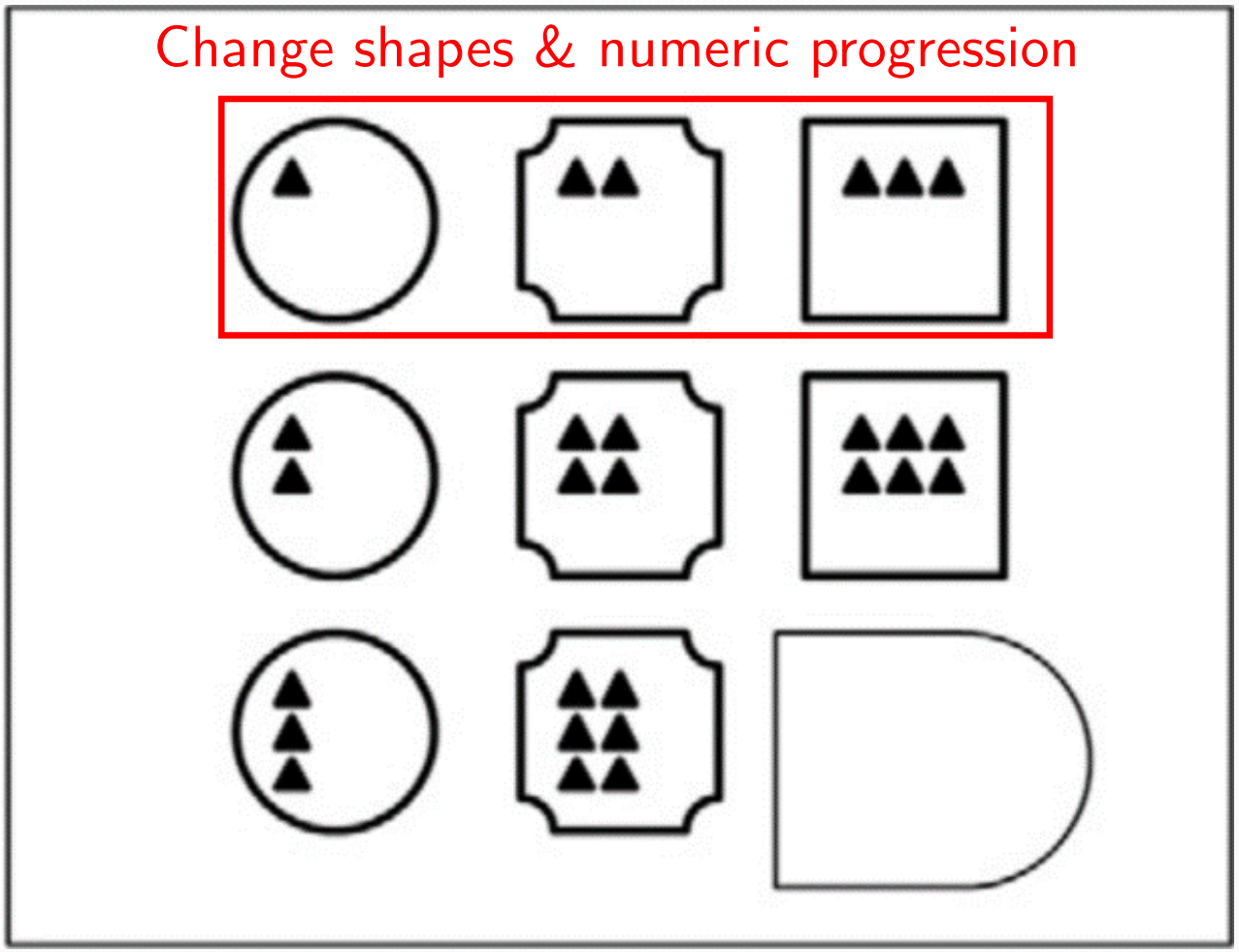

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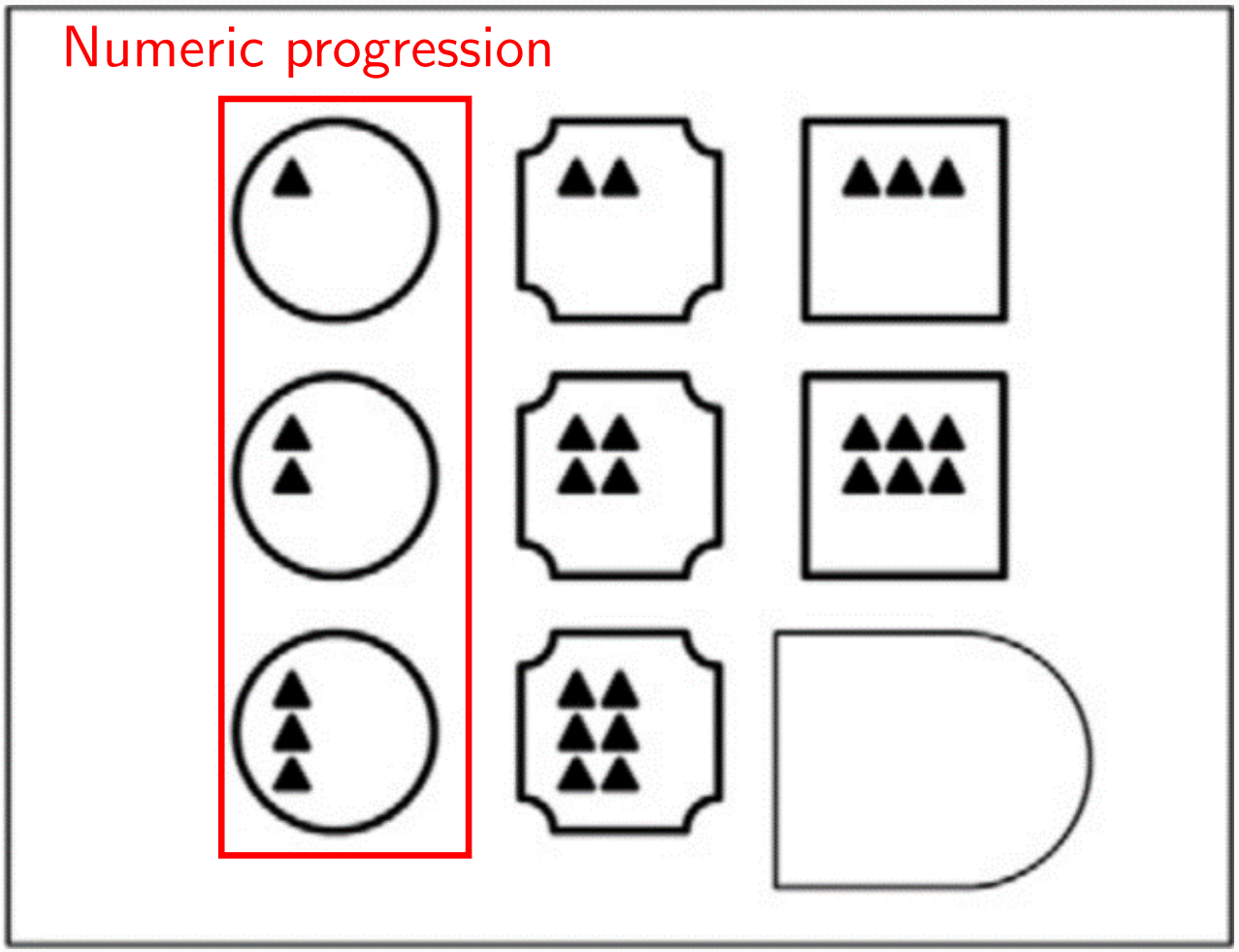
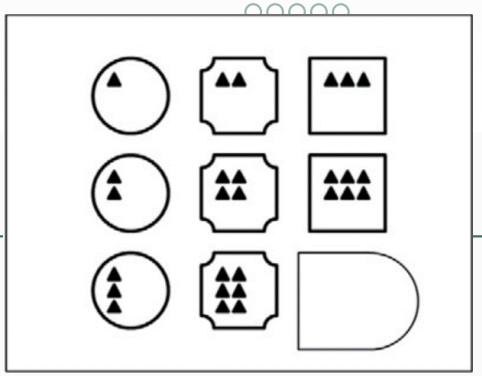
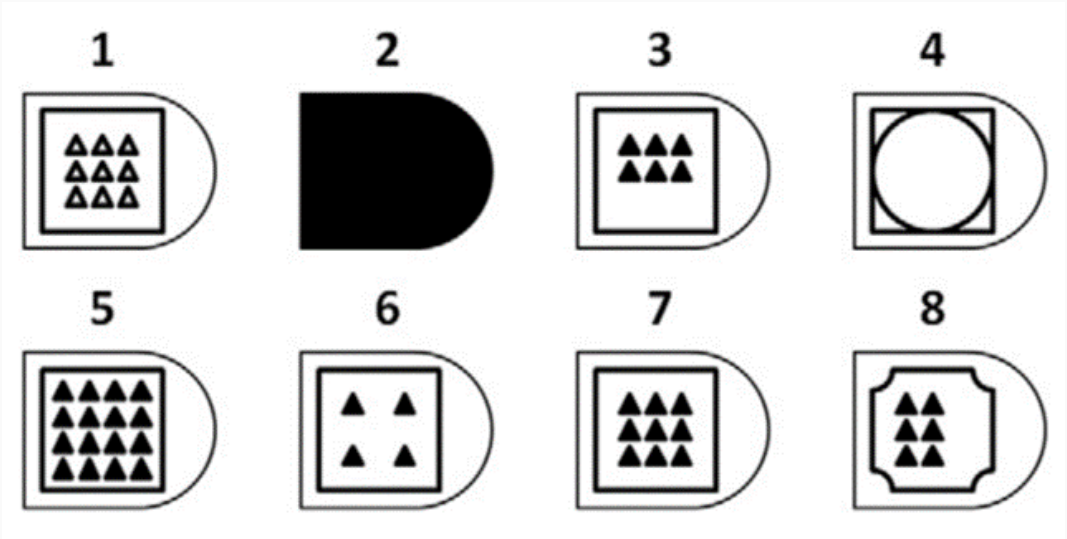


An example: The response list





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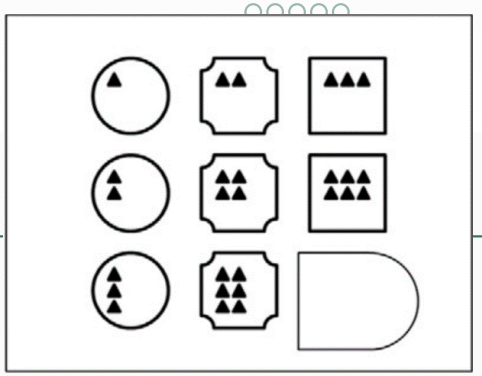

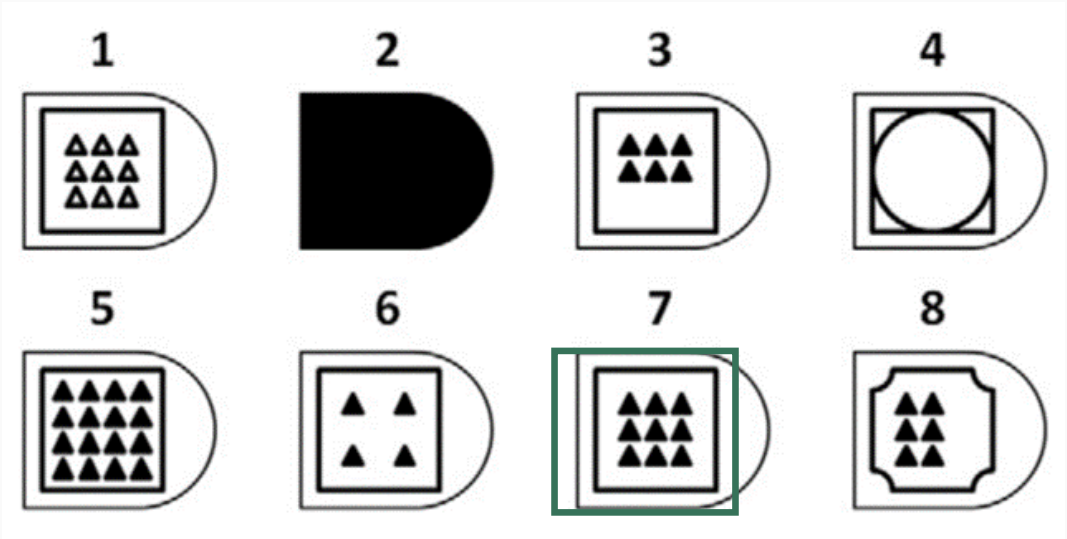

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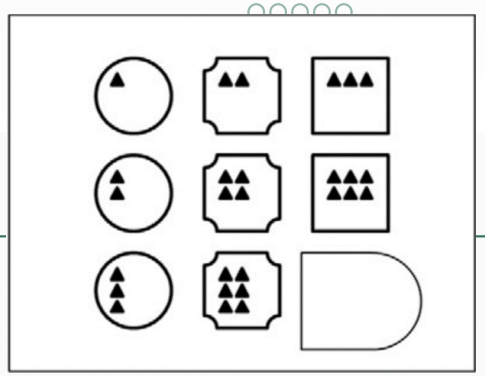
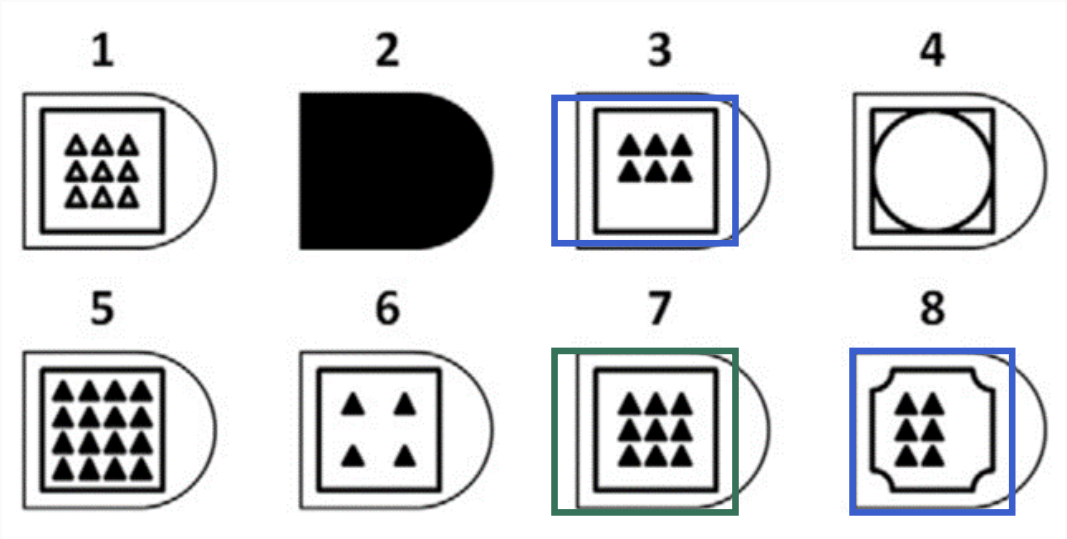
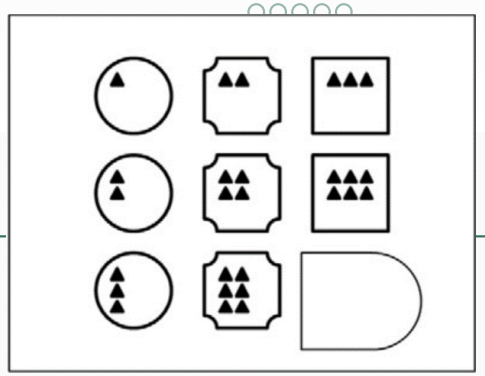


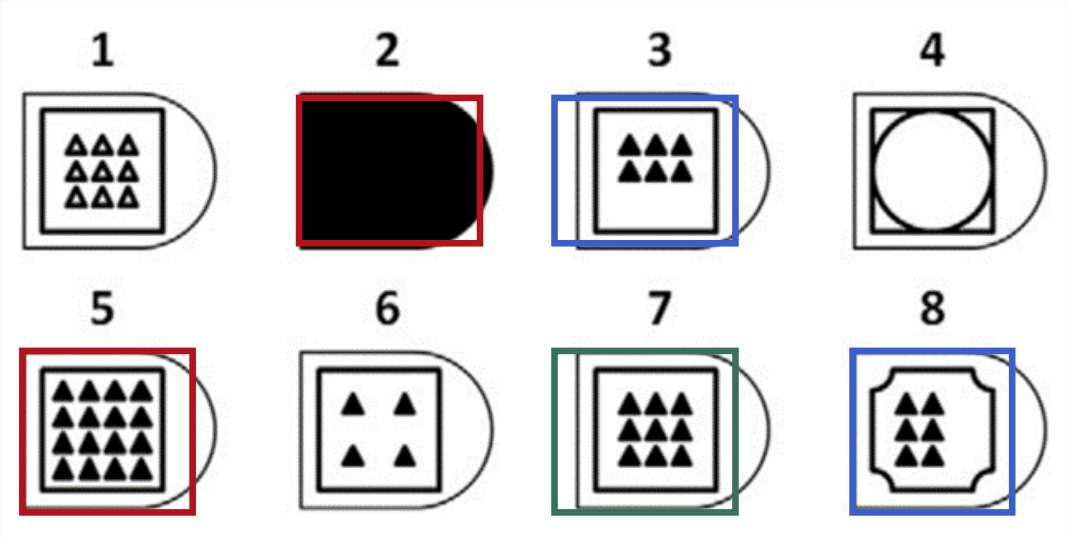


Repetition

Repetition of a cell **adjacent** to the blank space

An example: The response list





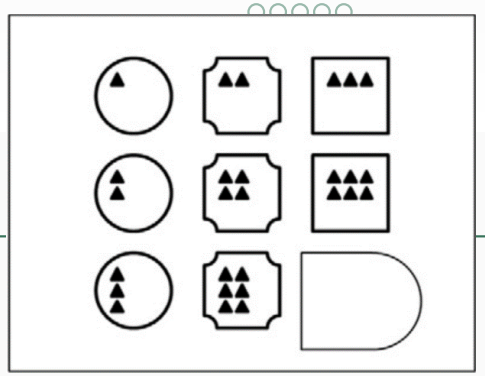
Repetition

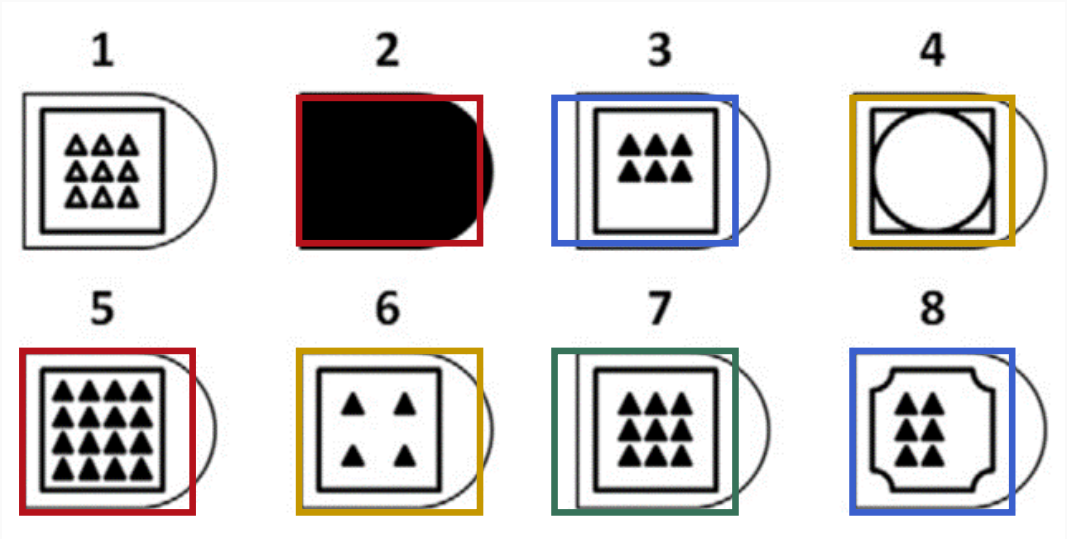
Repetition of a cell **adjacent** to the blank space

Difference

Different in appearance from every element of the matrix

An example: The response list





Repetition

Repetition of a cell **adjacent** to the blank space

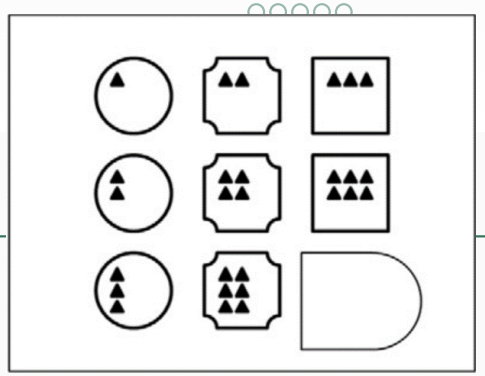
Difference

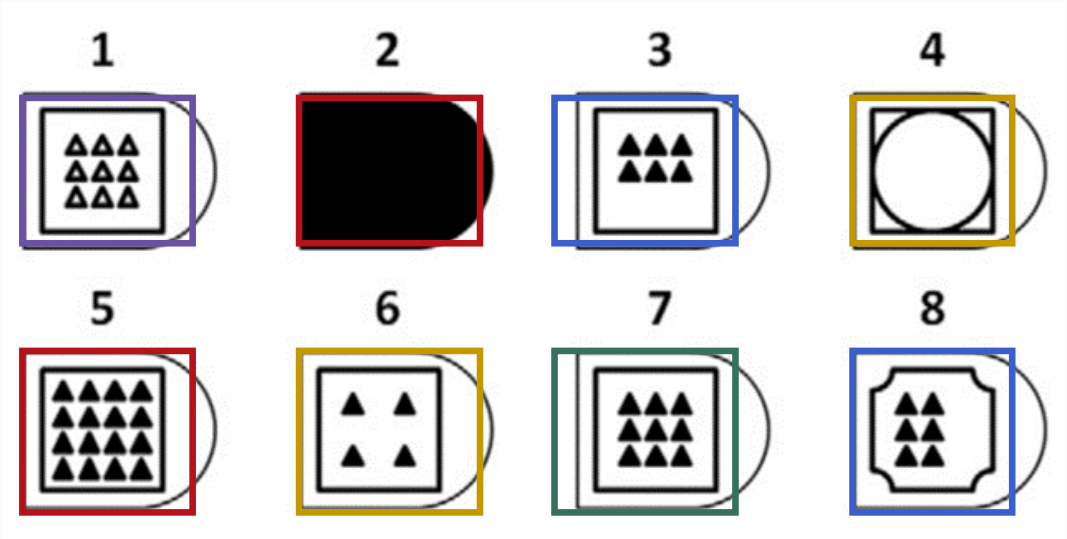
Different in appearance from every element of the matrix

Wrong Principle

Copy of a cell or combination of cells

An example: The response list





Repetition

Repetition of a cell **adjacent** to the blank space

Difference

Different in appearance from every element of the matrix

Wrong Principle

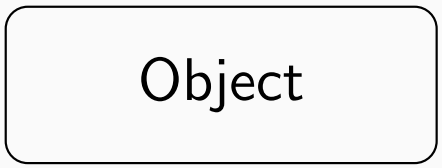
Copy of a cell or combination of cells

Incomplete Correlate

Almost the correct response

Category	Rule name	Definition
Visuospatial rules	Object addition/subtraction	Visually merge two elements
	Movement	With a steady background, the movement is created by changing the position of an object across the cells
	Rotation	The spatial orientation of the figure changes across the cells
	Mental transformation	The third cell results from the application of the characteristics in the second cell to the figures in the first cell.
	Numeric progression	Quantitative increase or decrease in the number of features from cell to cell
	Changes in shape	The figures change across cells
	Changes in shade	The shading of the figures changes across cells
	Changes in size	The size of the figures changes across cells
	Changes in margins	The margins of the figures change across cells
Logical rules	AND	The third cell contains ONLY the elements that appeared in both the first and second cells
	OR	The third cell contains ALL the elements in the first and second cells
	XOR	The third cell contains the elements in the first cell not present in the second cell and viceversa

The matRiks architecture: Matriks generator

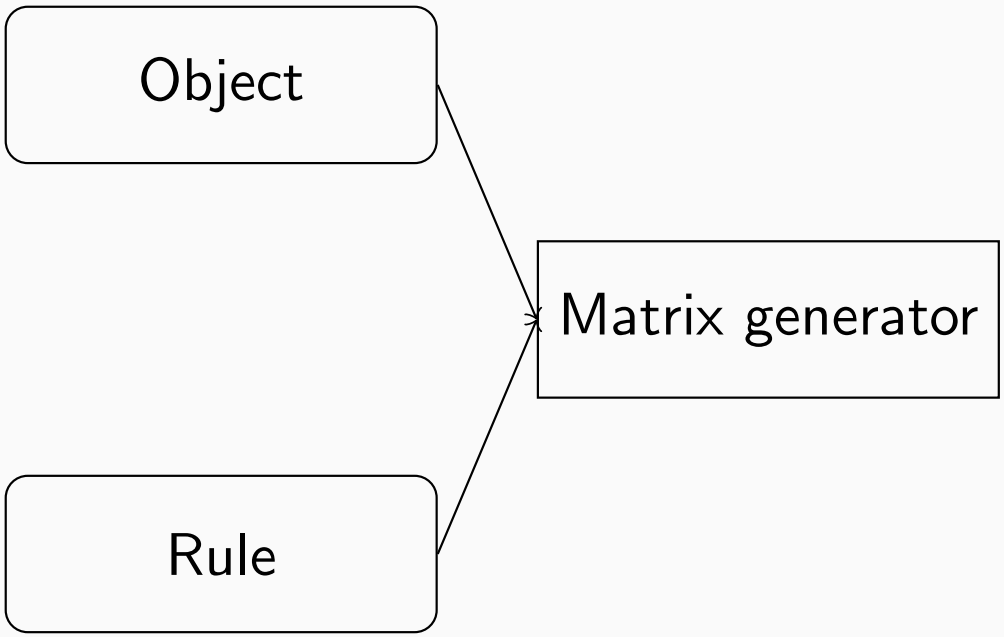


The matRiks architecture: Matriks generator

Object

Rule

The matRiks architecture: Matriks generator



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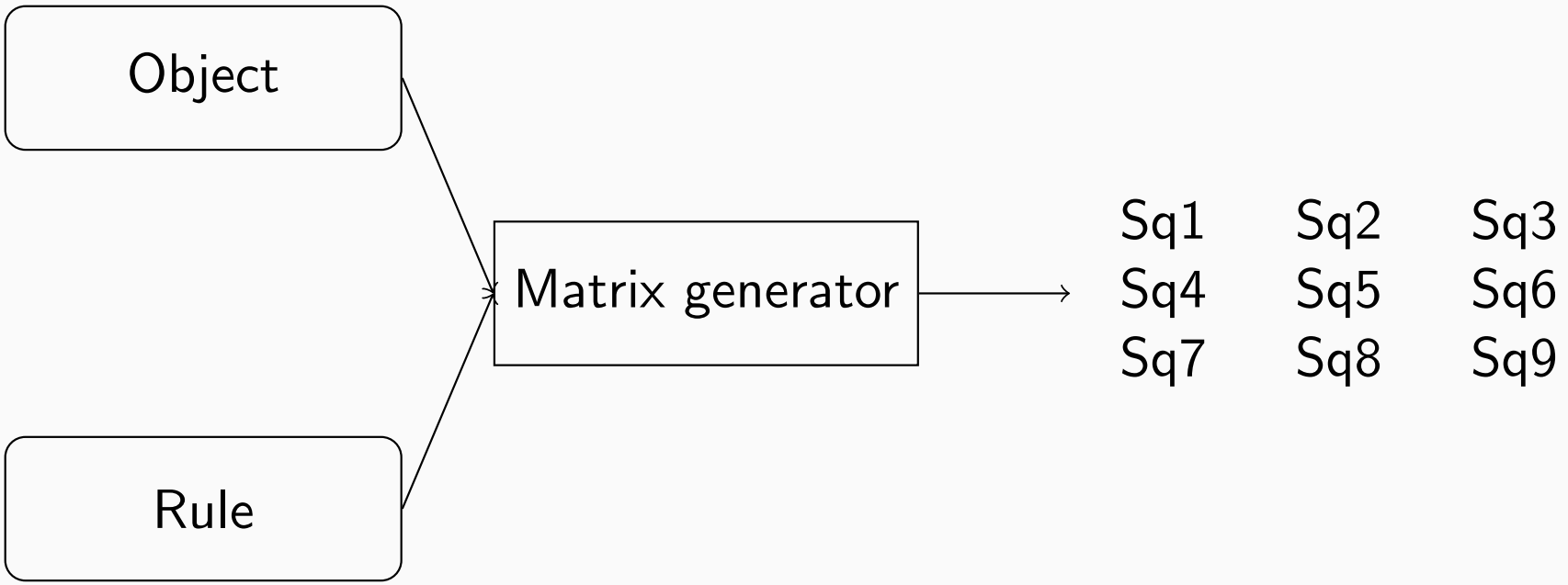
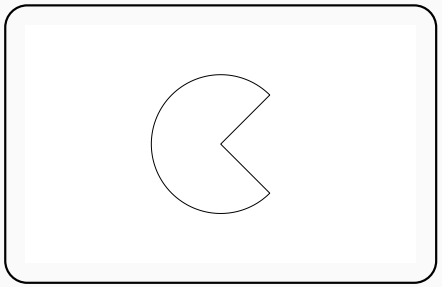
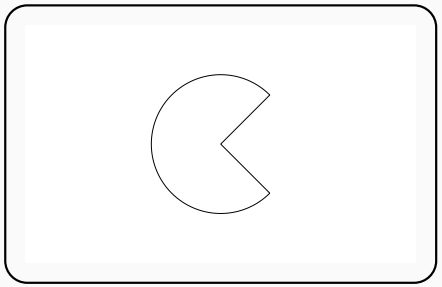
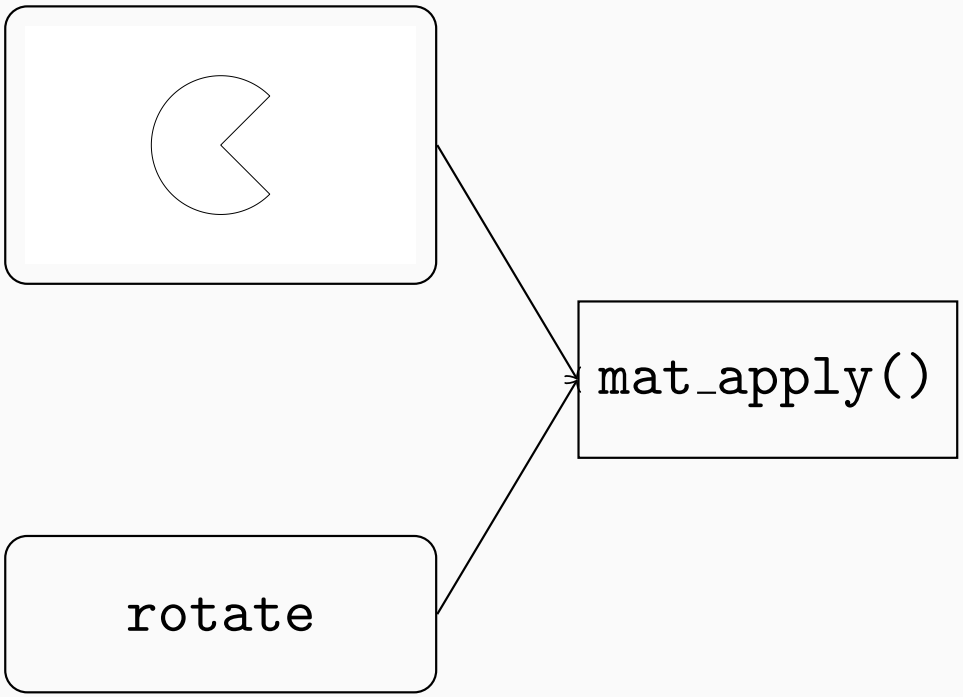
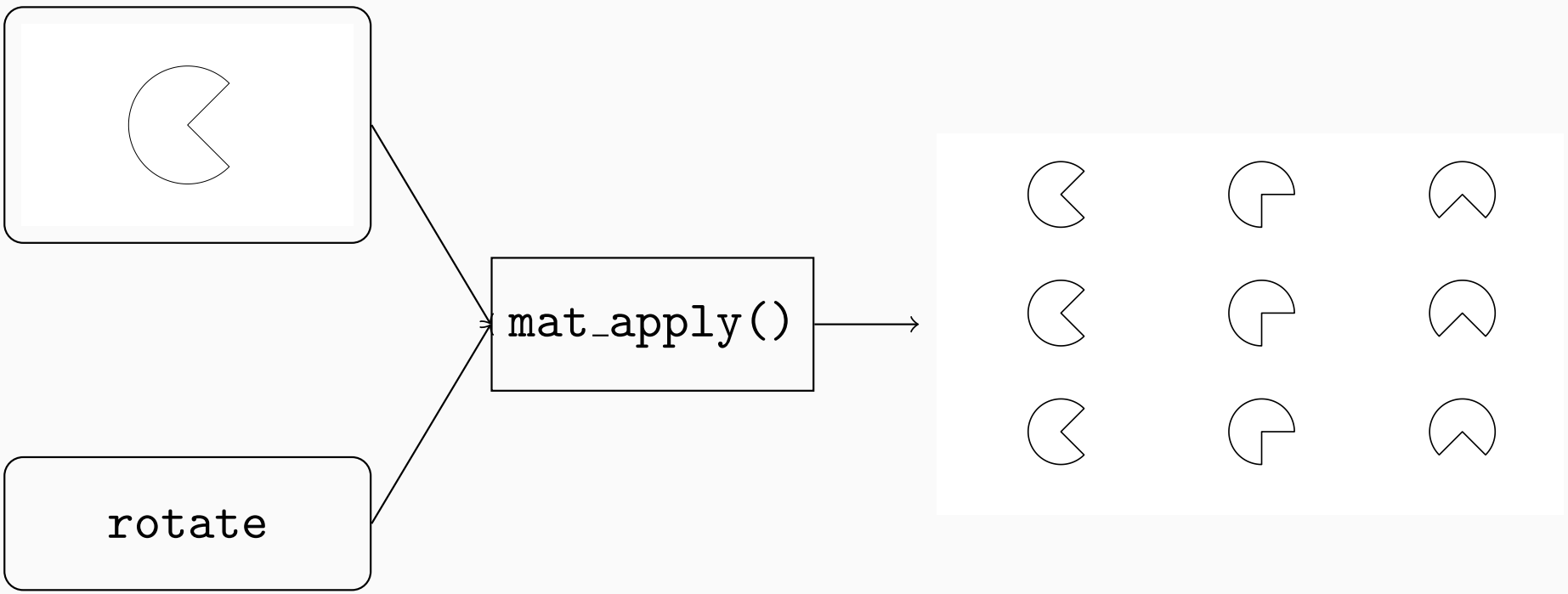






rotate


mat_apply()
rotate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The matRiks architecture: Response options generator

Sq1	Sq2	Sq3
Sq4	Sq5	Sq6
Sq7	Sq8	Sq9

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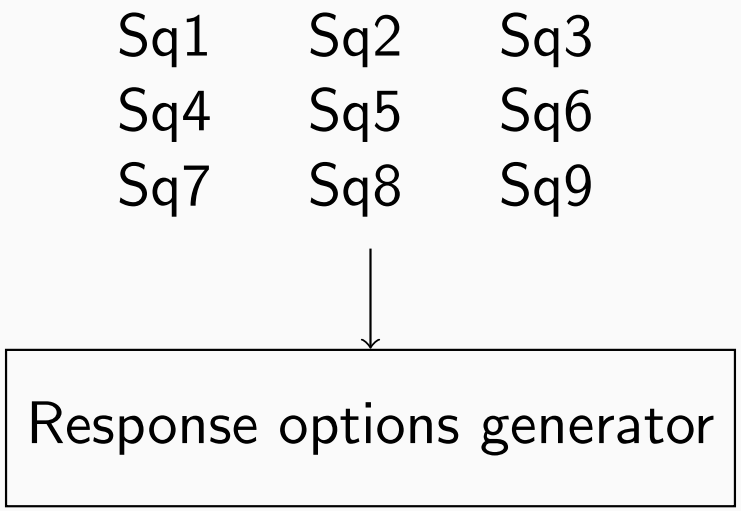

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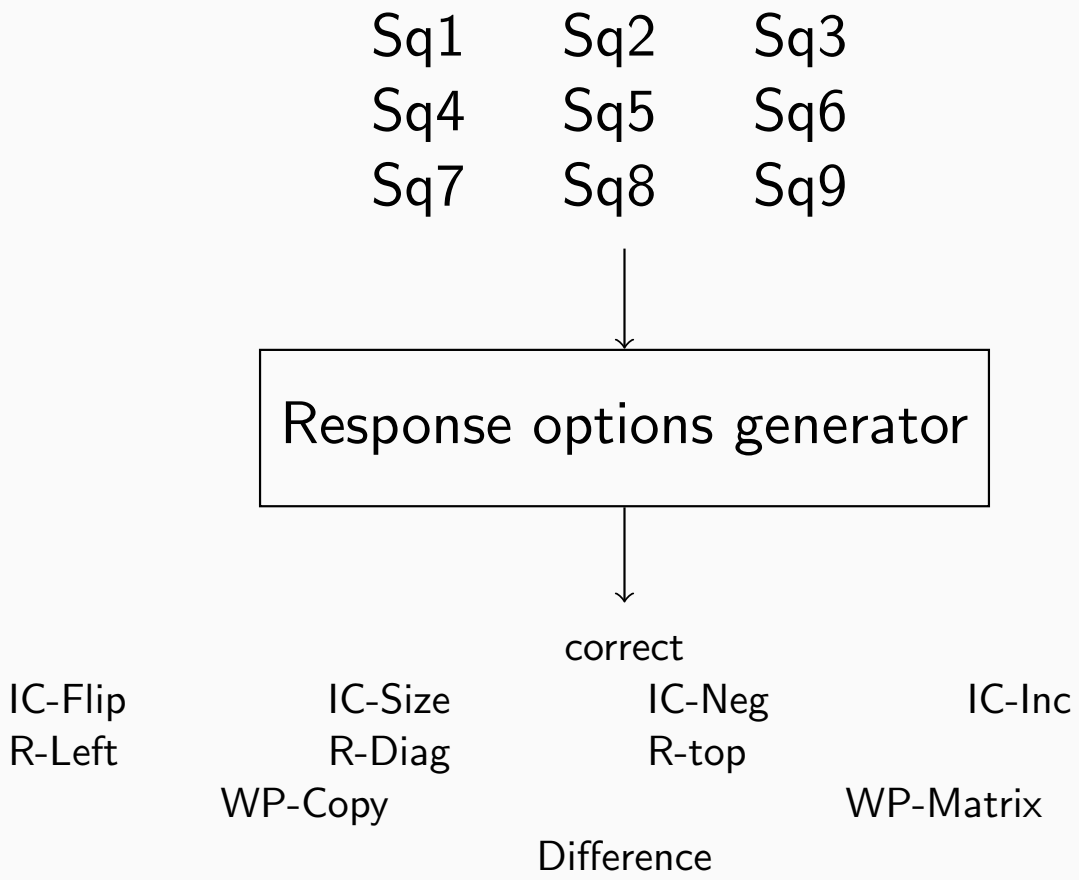
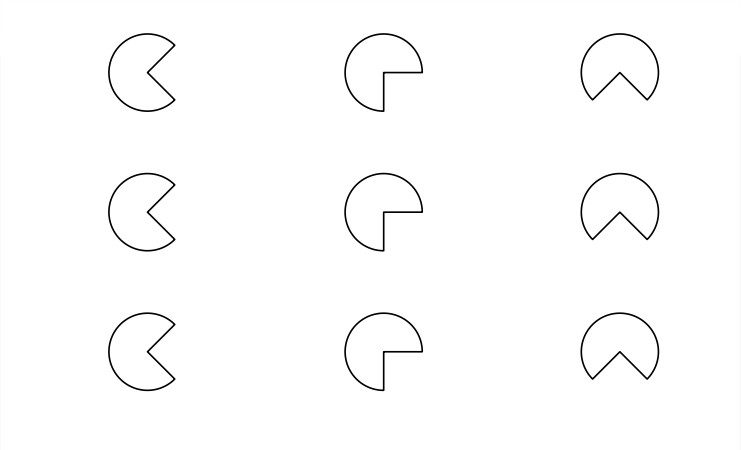
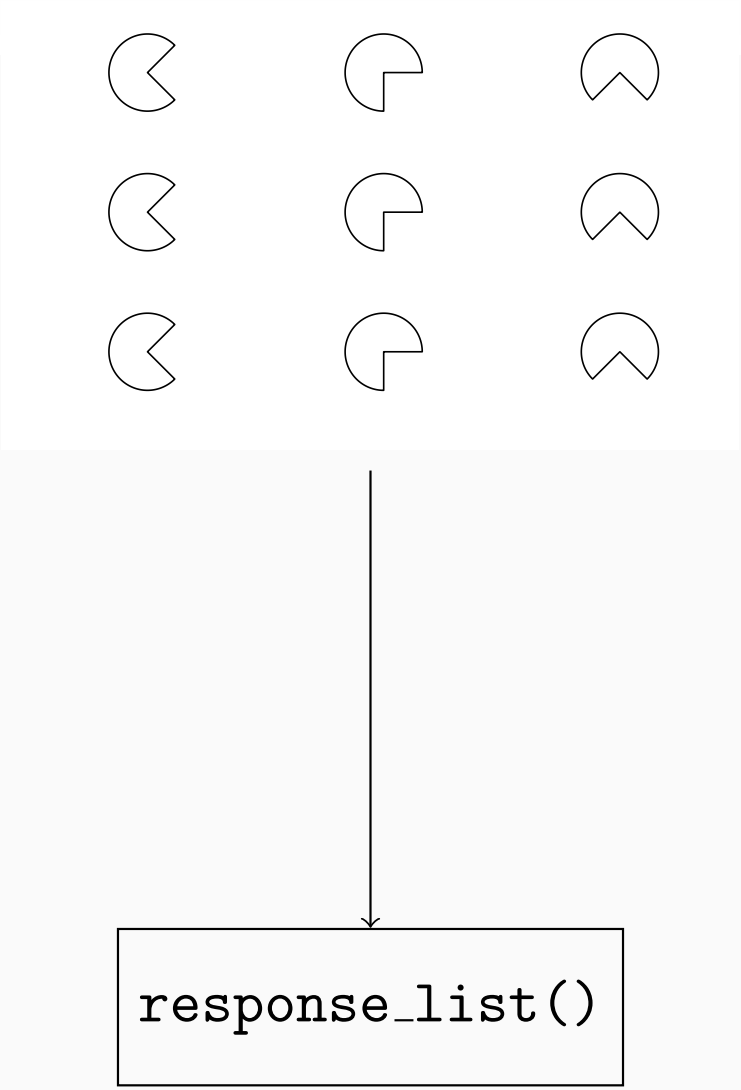
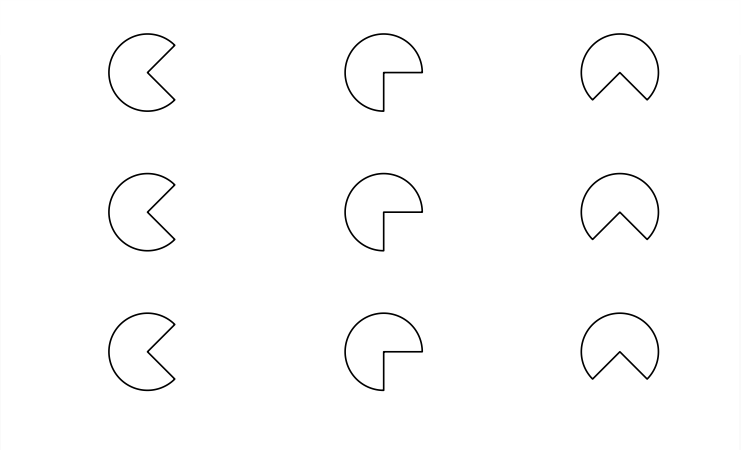
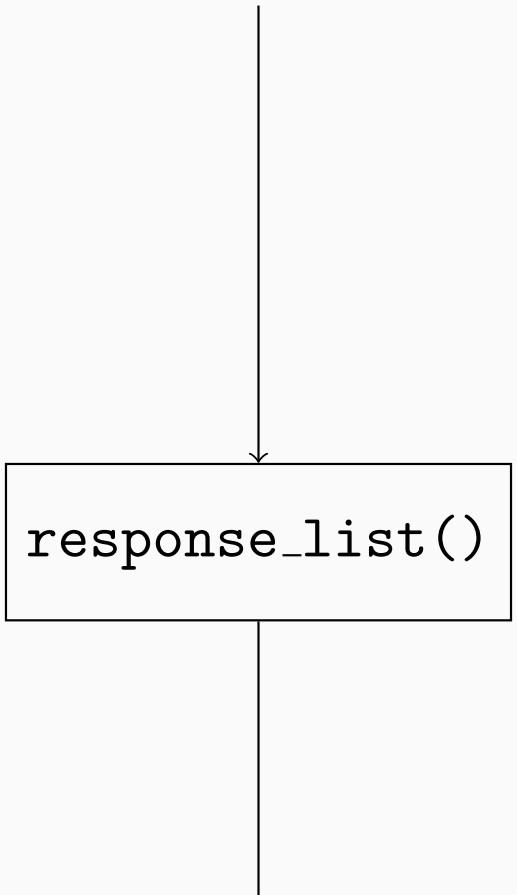





response_list()

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