



# INTEGRAMS

## Logical riddles

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- **Logic** is the branch of philosophy.
- It is the study of correct reasoning or good arguments.
- Logic with methodology is one of the basic philosophical disciplines.

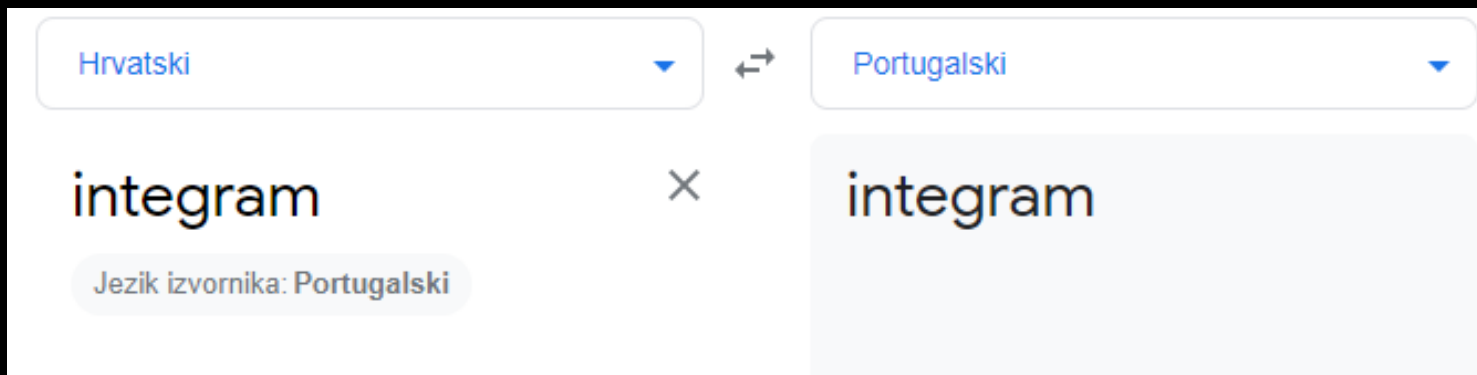
# LOGICAL RIDDLES INTEGRAMS

- Entertaining activity for children.
- Activity that helps develop logical reasoning and coming to conclusion, as well as combinatorics.
- Useful in primary school because these activities increase concentration and attention ability, as well as reading comprehension.
- According to Pisa researches, solving this type of tasks helps with critical thinking and learning.

# WHY INTEGRAM



- lat. Integrare: restore, complete, add something to a whole as its essential part
- mathematical: calculate or find integral
- According to Google translate, the word integram comes from Portuguese 😊



# EXAMPLE 1

- Three friends, John, Mark and Charles, went into the forest to pick mushrooms. Their sisters came, too.
- The girls' names are Jenny, Mary and Ann.
- The boys quickly loaded their baskets and then helped the girls.
- Determine the name of each boy if you know the following:
  - neither of the boys put mushrooms into his sister's basket
  - Mark put a few mushrooms into Jenny's and Mary's baskets
  - John put a few mushrooms into Mary's and Ann's basket.

	Jenny	Mary	Ann
John	+	-	-
Mark	-	-	+
Charles	-	+	-

## EXAMPLE 2

- Four friends live in different towns and they train one sport.
  - John plays football and doesn't live in Bristol.
  - Mark plays handball and doesn't live in London.
  - Greg doesn't train athletics and doesn't live in Oxford.
  - Luke doesn't play basketball and doesn't live in London.
  - The boy who lives in Bath trains athletics.
  - The boy who plays handball doesn't live in Bristol.
  - In which town does each of the boys live and which sport does he train?





	<b>Bristol</b>	<b>London</b>	<b>Oxford</b>	<b>Bath</b>	<b>Foot.</b>	<b>Hand.</b>	<b>Athlet.</b>	<b>Basket.</b>
Ivan	-	+	-	-	+	-	-	-
Marko	-	-	+	-	-	+	-	-
Zlatko	+	-	-	-	-	-	-	+
Neven	-	-	-	+	-	-	+	-
<b>Foot.</b>	-	+	-	-				
<b>Hand.</b>	-	-	+	-				
<b>Athlet.</b>	-	-	-	+				
<b>Basket.</b>	+	-	-	-				



	<i>bag</i>	<i>lamp</i>	<i>book</i>	<i>vase</i>	<i>picture</i>	<i>grazie</i>	<i>merci</i>	<i>tack</i>	<i>Thank you</i>	<i>danke</i>	<i>bedroom</i>	<i>dining room</i>	<i>hall</i>	<i>kitchen</i>	<i>Living room</i>
<i>Anna</i>	-	-	-	+	+	-	+	-	-	-	+	-	-	-	-
<i>Jan</i>	-	-	+	-	-	-	-	-	-	+	-	+	-	-	-
<i>Marian</i>	+	-	-	-	-	-	-	+	-	-	-	-	+	-	-
<i>Peter</i>	-	+	-	-	-	+	-	-	-	-	-	-	-	+	-
<i>Tom</i>	-	-	-	-	+	-	-	-	+	-	-	-	-	-	+
<i>Bedroom</i>	-	-	-	+	-	-	+	-	-	-					
<i>Dining room</i>	-	-	+	-	-	-	-	-	-	+					
<i>Hall</i>	+	-	-	-	-	-	-	+	-	-					
<i>Kitchen</i>	-	+	-	-	-	+	-	-	-	-					
<i>Living room</i>	-	-	-	-	+	-	-	-	+	-					
<i>Grazie</i>	-	+	-	-	-										
<i>Merci</i>	-	-	-	+	-										
<i>Tack</i>	+	-	-	-	-										
<i>Thank you</i>	-	-	-	-	+										
<i>Danke</i>	-	-	+	-	-										

# AND FOR THE END... SOME LOGIC



- IT IS NOT BECAUSE THINGS ARE DIFFICULT THAT WE DO NOT DARE, IT IS BECAUSE WE DO NOT DARE THAT THINGS ARE DIFFICULT.

*Seneca*

A white rectangular box containing the handwritten text "Thank You!" in a green, cursive font. Below the word "You!" is a simple green smiley face consisting of two dots for eyes and a curved line for a mouth.

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