



HENRI COANDĂ

Aviation pioneer, physicist, inventor of the jet engine and the discoverer of the effect which bears his name today.

The child, who was passionate about the wind, was born on 7th of June 1886 and became an aeronautics pioneer.

In 1910 he created and tested the first jet aircraft in the world - called "Coandă 1910", which he presented at the International Aeronautics Exhibition, in Paris.

In the same year, he noticed a phenomenon that was to be called the "*Coandă effect*", which is the invention that made him famous.

The Romanian inventor created a jet propulsion system used for jet aircrafts.

Over his entire career, Henri Coandă was the author of 250 patents in various fields.

UNESCO awarded him with the order "Merit for scientific research, in commanding degree", in 1961.

The airport in Bucharest is today named after him.





SECRET MESSAGE

This activity consists in discovering a secret message written by the Romanian aviation pioneer.

To decode it you must know that all vowels in words have been replaced with geometric figures (circle, triangle, square, rhombus, etc.) and the consonants have not undergone any change.

The words are written in the order they appear, but they are not spaced.

Discover the encrypted message and write it down on a white sheet.

"THΔF◇T◇RΔ□STHΔS◇M∇FTHΔSTΔPSY∇◇
T⊗KΔ, □NCL◇D□NGTHΔSM⊗LL∇NΔS,
□GN∇RΔD∇RL⊗◇GHΔD⊗T".

HΔNR□C∇⊗ND⊗



DIORAMA

The word literally means "through that which is seen", from the Greek di- "through" + orama "that which is seen, a sight". The diorama was invented by Louis Daguerre and Charles Marie Bouton.

Daguerre's and Bouton's diorama consisted of a piece of material painted on both sides. When illuminated from the front, the scene would be shown in one state and by switching to illumination from behind another phase or aspect would be seen. Scenes in daylight changed to moonlight, a train travelling on a track would crash, or an earthquake would be shown in before and after pictures.

Biological dioramas were created for the first time in the world in Bucharest.

The inventor of biological dioramas was a Romanian Darwinist biologist who studied the fauna of the Danube Delta and the Black Sea. Between 1892 and 1944 he was the director of the Bucharest Natural History Museum, which now bears his name.

He is also considered to be the first person to modernize the diorama by emphasizing the three-dimensional aspect and first to use dioramas in a museum setting. He founded a school of hydrobiology and ichthyology in Romania.





DANUBE DELTA

The waters of the Danube, which flow into the Black Sea, form the largest and best-preserved of Europe's deltas.

The greater part of the Danube Delta lies in Romania, with a small part in Ukraine. Its approximate surface area is 4,152 km², of which 3,446 km² is in Romania.

With the lagoons of *Razim-Sinoe* (1,015 km² with 865 km² water surface), located south of the main delta, the total area of the Danube Delta is 5,165 km².

The *Razim-Sinoe* lagoon complex is geologically and ecologically related to the delta and the combined territory is listed as a UNESCO World Heritage Site.

The Danube Delta hosts over 300 species of birds as well as 45 freshwater fish species in its numerous lakes and marshes.





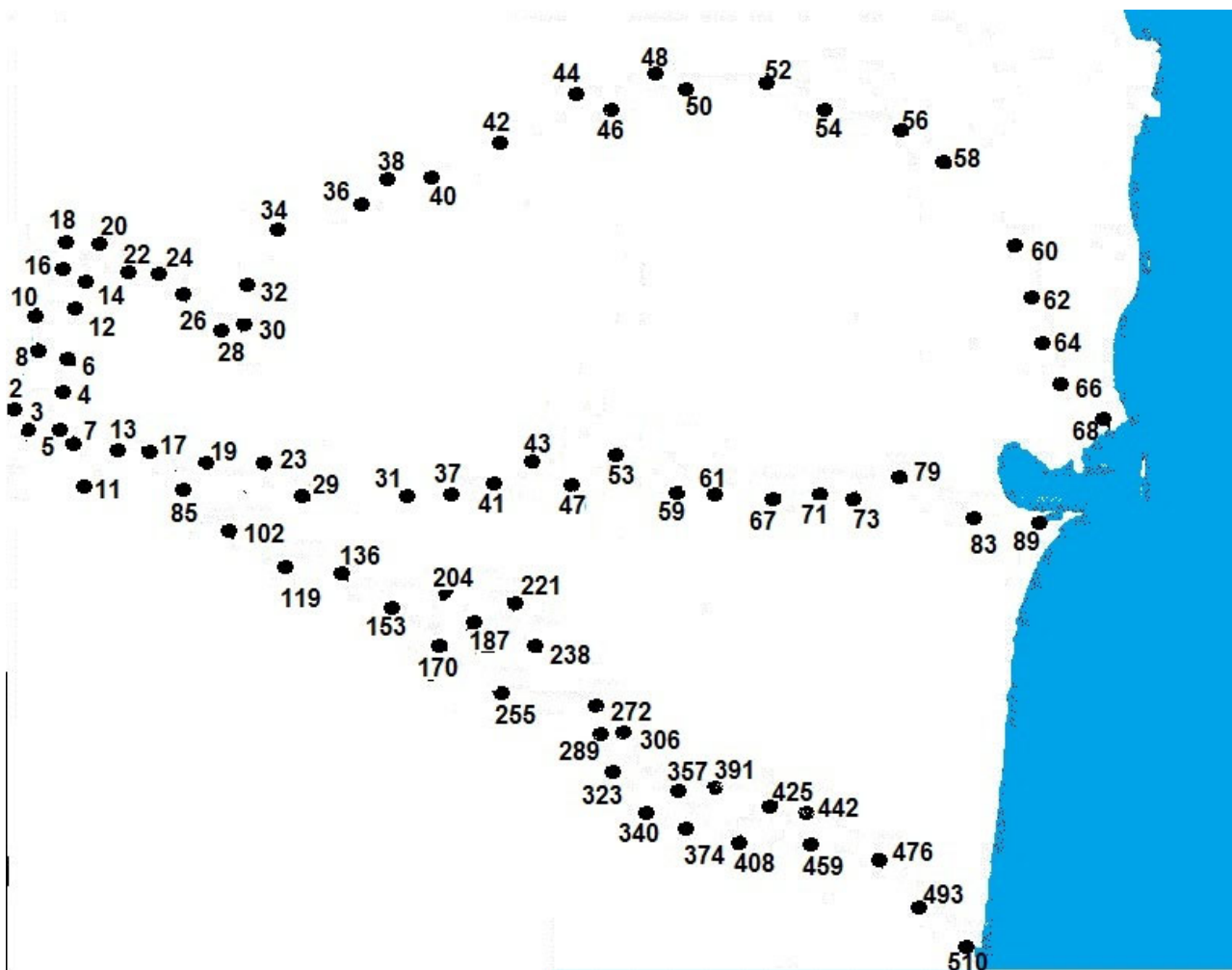
Danube Delta Arms

Join the numbers in ascending order using the following color code:

red – even numbers

yellow – prime numbers

blue – multiples of 17 larger than 80





Then use the three colors to fill the boxes, following the indications:

26
numbers

SFANTUL
GHEORGHE

34
numbers

CHILIA

24
numbers

SULINA



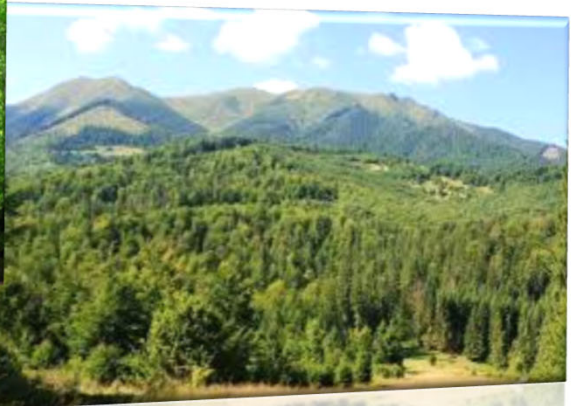
INCREDIBLE FORESTS TO EXPLORE IN ROMANIA

Romania shelters some amazing natural wonders, awe-inspiring places that will astonish even the seasoned traveller.

From the peaceful Danube Delta to fantastic waterfalls to breathtaking scenery scattered all over the Carpathians, the country is a true paradise for nature lovers.

Romania has the largest and best-preserved virgin forests in Europe, sheltering centuries-old trees and creating fairytale decors.

In Romania, the beech forests included in UNESCO's World Heritage List are the ones from Nera's Springs, Nera-Beușnița Keys, Domogled-Cerna Valley (in Caraș Severin county), the Cozia Massif, Lotrișor (Vâlcea county), the Șinca secular forest (Brașov county), Slătioara secular forest (Suceava county), and Groșii Țibleșului and Strâmbu Băiuț (Maramureș county). These occupy a surface of almost 25,000 hectares.





THE SECULAR FOREST OF ȘINCA

A virgin forest where there are trees older than 500 years, the forest of Șinca, houses the tallest beech of Romania, measuring 62.5 meters and having a trunk with a diameter of three meters. Monumental trees of all ages adorn the forest, in an environment untouched by humans, where plants and animals live in harmony – a place to be explored, admired and protected.





READY FOR A CHALLENGE?

Use your math skills to find the age of three species of animals who live in Şinca forest and the age of the oldest beech from the Şinca forest.

$$\text{Hermann's tortoise} + \text{Hermann's tortoise} + \text{Hermann's tortoise} = \text{Brown bear} + \text{Brown bear} + \text{Brown bear} + \text{Brown bear}$$

$$\text{Hermann's tortoise} + \text{Hermann's tortoise} + \text{Hermann's tortoise} - \text{Brown bear} - \text{Brown bear} = \text{Lynx} + \text{Lynx} + \text{Lynx}$$

$$\text{Brown bear} + \text{Brown bear} - \text{Lynx} - \text{Lynx} = 20$$

$$\text{The oldest beech tree} = \text{Brown bear} \times \text{Lynx} - \text{Hermann's tortoise} - \text{Hermann's tortoise} - \text{Hermann's tortoise}$$

Brown bear:

Lynx:

Hermann's tortoise:

The oldest beech tree:



DECODE THE CLUE

Decode the clue using the numbering system. This number is related to this day:

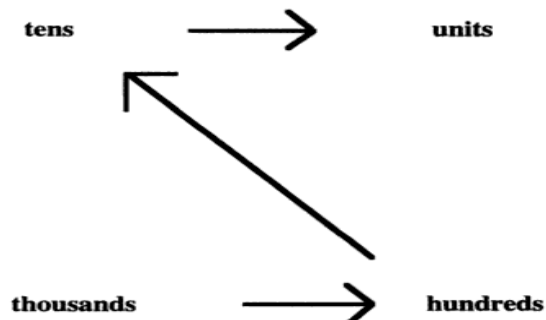
𐌱 = _ _ _ _

𐌱	𐌲	𐌳	𐌴	𐌵	𐌶	𐌷	𐌸	𐌹
1	2	3	4	5	6	7	8	9
𐌺	𐌻	𐌼	𐌽	𐌾	𐌿	𐍀	𐍁	𐍂
10	20	30	40	50	60	70	80	90
𐍃	𐍄	𐍅	𐍆	𐍇	𐍈	𐍉	𐍊	𐍋
100	200	300	400	500	600	700	800	900
𐍌	𐍍	𐍎	𐍏	𐍐	𐍑	𐍒	𐍓	𐍔
1000	2000	3000	4000	5000	6000	7000	8000	9000

with which, for example:

𐍂𐍃𐍅𐍆	𐌲𐌴𐌳𐌵	𐌶𐌸𐌹𐌱
1992	4723	6859

For native English-speakers (as well as for those counting above 99 in Latin), reading the ciphers involves the following mental gymnastics:





FIND THE CODE

A safe has a combination lock of 3 digits. Find the code by coloring the boxes with the smallest prime number.

1	0	3	7	8	4	5	1	1	4	5	6	6	7	8	9	0	1	3
0	1	3	2	2	2	2	4	5	6	7	8	9	0	9	8	7	6	5
3	1	2	2	4	5	2	2	7	8	0	8	7	6	5	4	3	1	0
3	3	3	1	1	2	2	4	4	5	5	6	6	7	7	8	8	9	9
4	5	4	5	2	2	4	5	4	5	4	5	4	5	4	5	4	5	4
9	0	7	2	2	6	0	4	3	0	1	3	4	8	7	9	0	4	5
6	6	2	2	2	2	2	2	5	5	5	5	3	3	3	4	4	4	4
1	3	4	5	6	9	8	7	5	6	7	9	0	3	4	1	5	6	7
4	0	3	3	4	5	6	6	2	2	2	0	0	1	5	4	5	3	8
5	6	7	9	0	3	4	2	2	2	2	5	4	5	9	0	4	4	7
6	7	1	1	6	6	2	2	0	2	2	9	0	4	4	4	4	0	3
7	5	5	5	6	2	2	6	6	2	2	4	4	4	5	6	7	0	8
3	8	6	7	9	0	3	7	7	2	2	5	4	5	5	4	5	8	7
1	1	5	6	7	0	8	8	5	2	2	9	0	4	9	0	4	0	3
1	5	5	7	9	0	3	4	8	2	2	4	4	4	4	4	4	0	8
0	8	7	7	9	9	0	9	2	2	2	2	5	4	5	0	0	6	7
0	0	3	6	3	3	6	6	0	0	4	4	9	0	4	2	2	4	3
4	0	8	5	6	7	7	0	6	4	1	5	4	4	2	2	1	3	4
5	6	7	8	7	7	5	7	7	0	3	4	1	2	2	1	1	4	7
6	8	8	0	3	8	8	5	5	3	1	1	2	2	3	3	2	2	8
7	3	7	0	8	3	4	4	8	5	6	2	2	2	2	2	2	2	9
8	6	7	6	7	3	3	3	0	0	0	1	1	1	4	4	2	2	0
9	5	6	7	0	8	8	8	7	9	0	3	4	9	5	6	2	2	1
1	3	5	6	7	9	0	3	4	1	5	6	7	0	1	3	3	7	3
4	3	4	5	6	7	0	8	7	6	6	9	0	3	4	5	6	7	5



DECODE THE MESSAGE

Using the Morse code, find the message:

... - . - -

- .. - - .

... - - - - - -

. . - - - . - .

- - -

- . - . . - . . - - .



A ● -

B - ● ● ●

C - ● - ●

D - ● ●

E ●

F ● ● - ●

G - - ●

H ● ● ● ●

I ● ●

J ● - - -

K - ● -

L ● - ● ●

M - -

N - ●

O - - -

P ● - - ●

Q - - ● -

R ● - ●

S ● ● ●

T -

U ● ● -

V ● ● ● -

W ● - -

X - ● ● -

Y - ● - -

Z - - ● ●

STEAM Time – Solve UNESCO Crime



ROMANIAN CUISINE



The diversity of Romanian cuisine is a testimonial to how much different cultures have influenced it.

Romania's food sees glimpses of Hungarian, Turkish, Greek, German, and Austrian cuisines while maintaining the singularity of its Romanian persona with herbs and spices.

Cozonac is a sweet bread filled with Turkish delight, poppy seeds paste, or sweet walnut paste and is usually a part of every major Romanian holiday, be it New Year's Day, Easter, Christmas, or the Pentecost. *Cozonac* could be prepared differently across regions and could include rum or vanilla flavour, hazelnuts or walnuts, grated lemon or orange zest, Turkish delight, raisins, and could be sprinkled with poppy seeds on top.



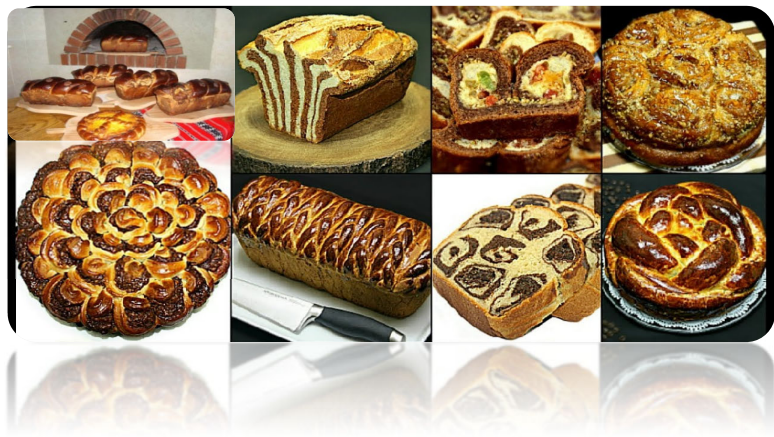
SOLVE WEIGHT PROBLEM

Cozonac Moldovenesc (authentic recipe from 1871)

Considering that:

- only three *cozonaci* can be made
- the dough is divided into equal parts
- each *cozonac* has a different filling
- 1 egg is 50 g and the egg yolk is 40% of the weight of the egg
- the weight of 1 ml of milk is 1.03 g

Find out each cozonac's weight!





DOUGH	weight / amount		convert to grams		
flour	one and a half of a kg				
milk	300 ml				
egg yolks	from 20 eggs				
egg whites	from 10 eggs				
fresh yeast	75 g				
sugar	50 dag				
salt	200 dg				
double cream	3000 cg				
melted butter	a quarter of a kg				
lemon peel	30 g				
Total					
FILLINGS					
raisins	0.2 kg				
true rum	140 g				
peeled orange	20 dag				
	walnuts	200 g			
	milk	100 ml			
	sugar, vanilla	100 g			
	1 tablespoon cocoa	6000 mg			
		colored Turkish delight	3 hg		
TOTAL					
Answer					



SARMALE

The most popular traditional food in Romania, *sarmale*, has Turkish origins.

This lip-smacking “national” dish comprises a minced meat (pork or beef and pork) and rice mixture, local herbs, and vegetables rolled in young grape or pickled cabbage leaves to create a delicate flavor.

The best-tasting *sarmale* are slow cooked in clay pots in the oven and covered with a little water. Traditional bacon slices and cabbage brine are added for smoky flavor and sourness.



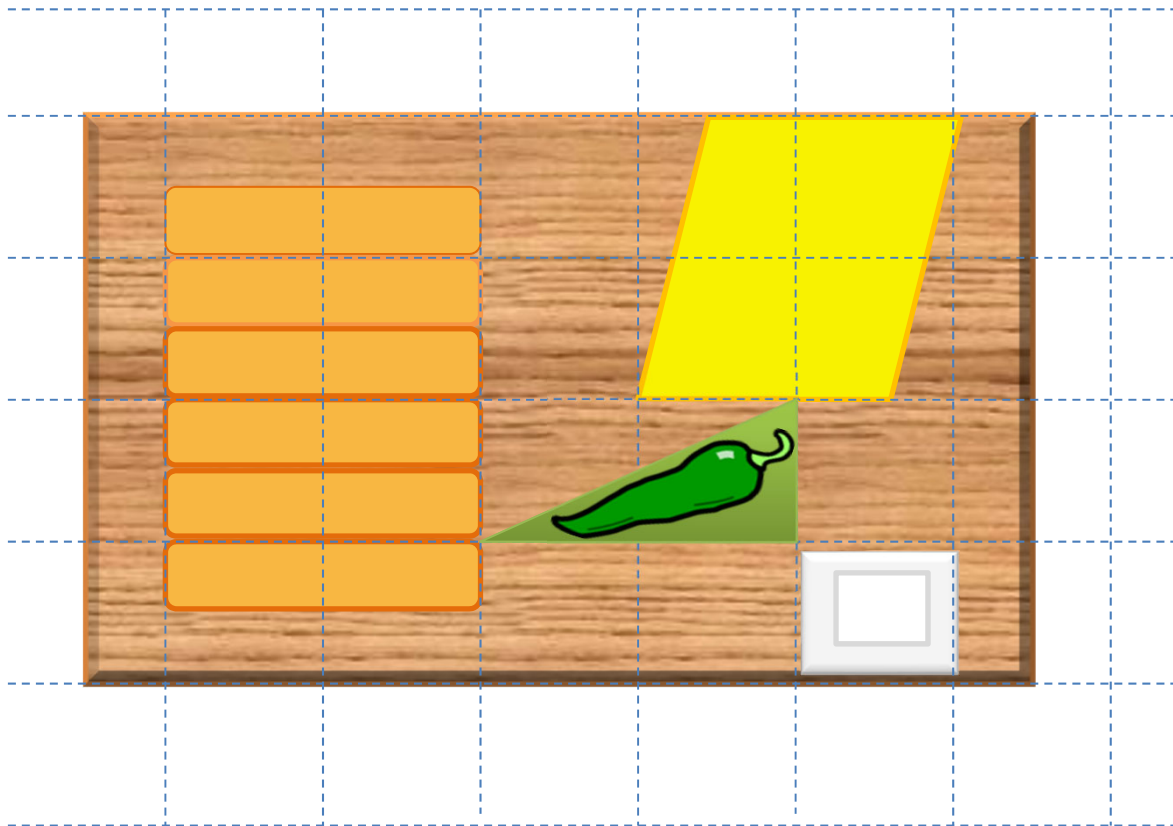
If you’re in Romania during Christmas, feast on a creamy, delectable, and an extremely satisfying dish of *sarmale* with sour cream and *mămăligă* (yellow maize flour porridge), a traditional dish during the holiday season.



THE PLATE AREA MYSTERY

On a plate we have *sarmale* with *mămăligă*, sour cream and a chili pepper.

By seeing the figure, calculate the area of each meal in the plate, knowing that 1 *sarma* has the length of 8 cm.



Sarmale:
Mămăligă:
Sour cream:
Chili pepper:



SIGHIȘOARA'S CITADEL

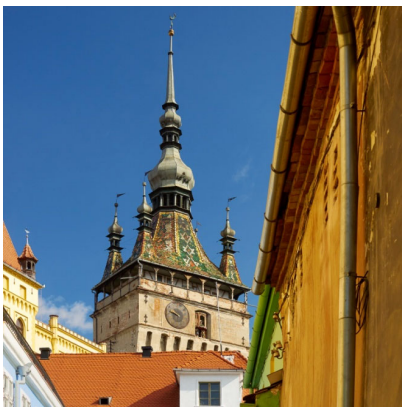
Sighișoara's citadel was built in the 12th century, when it was known as Castrum Sex (Fort Six).

Designated as a World Heritage Site by UNESCO, this perfectly intact 16th century gem with nine towers, cobbled streets, burgher houses and ornate churches rivals the historic streets of Old Prague or Vienna for atmospheric magic

The Clock Tower of Sighișoara is the main entry point to the citadel, opposite guarded by Taylor's Tower. With its 64 meters of height, the tower is visible from almost every corner of the city, its purpose was to defend the main gate of the citadel and served as the town hall until 1556.

Now it's considered one of the most expressive clock tower in the whole Transylvania. The clock was built in Switzerland and installed in 1648. There are two clock faces. One on the facade, facing the lower city, is decorated with the wooden figurines about 0.80 meters in height. There are seven of them in total, each representing a day of a week. Every day the clock's mechanism rotates one of the figurines on the outside.

The other facade, facing the citadel, also has a clock face and is decorated with the figurines symbolizing the Peace Goddess, Justice and Righteousness and Day and Night.





Secret message from Sighișoara

Considering that the minute hand covers 360° when it completes its cycle, in other words, an hour:

Make your way from start to finish by finding the *angles made by the hands of the clocks*, and then following the path with correct answer and coloring it. You may follow the path in either direction.

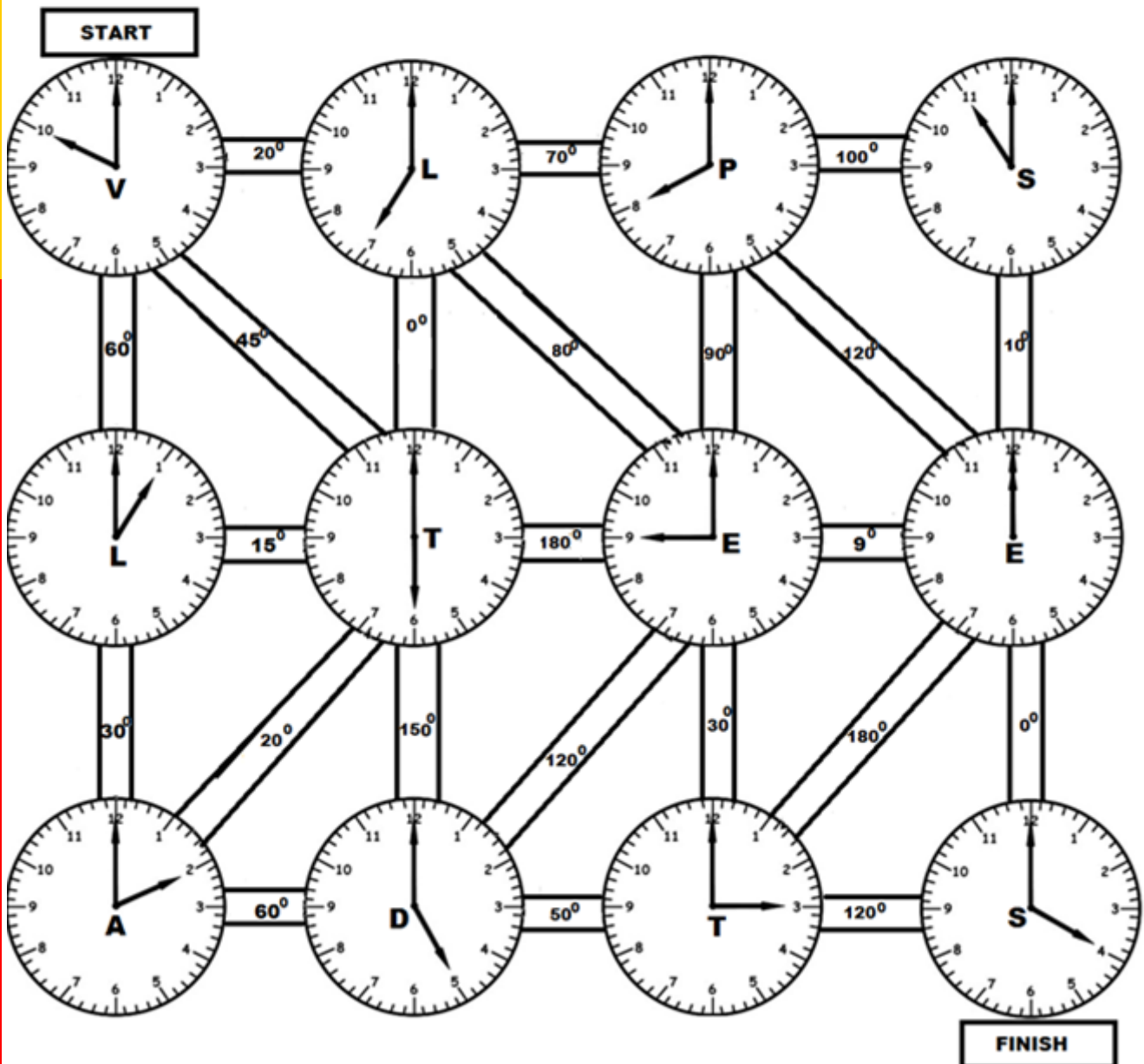
Find the secret message looking the way you follow.

The secret message is the name of Prince of Wallachia who was born in December 1431 in the fortress of Sighișoara.

--	--	--	--	--	--	--	--	--	--



Clocks and Angles





Bran castle

Surrounded by an aura of mystery and legend and perched high atop a 200-foot-high rock, built on the site of a Teutonic Knights stronghold dating from 1212, Bran castle was first documented in an act issued on November 19, 1377, giving the Saxons of Kronstadt (Braşov) the privilege to build the Citadel. Built by the local Saxons after King Louis I of Anjou granted them this right, the fortress remained for long periods of time under the control of the city of Braşov with a few major exceptions. One of these cases in the early 1400s when Mircea the Old, the prince of Southern Romania and the grandfather of future Prince Vlad the Impaler, got the right to use the fortress in order to support his anti-Ottoman crusades.

His grandson was, nonetheless, less keen on continuing granting the merchants from Brasov commercial privileges. Vlad the Impaler attacked Braşov and killed many Saxon merchants who in return started a strong defamation campaign, comparing him to the devil.

The fortress remained in the possession of the city of Braşov for the following centuries, but its military role gradually became less important. Partially ruined, the fortress was offered as a gift to Queen Maria of Romania. The castle is now a museum open to tourists, displaying art and furniture collected by Queen Marie.

Narrow winding stairways lead through some 60 timbered rooms, many connected by underground passages, which house collections of furniture, weapons and armor dating from the 14th to the 19th centuries. The castle overlooks the picturesque village of Bran, which offers an open-air Ethnographic Museum consisting of old local-style village houses complete with furniture, household objects and costumes.

STEAM Time – Solve UNESCO Crime



BRAN CASTLE





WHO'S THE CRIMINAL?

CLUE :

The sum of angles of any triangle is 180° .

Find all the missing angles in the triangles.

Write the corresponding letter to the right position of each angles to find out the criminal's name.

