



**Private Secondary Schools “Klasika” Research Days - 2017 ” $\alpha$ ,  $\beta$  ...”**  
**Study and research area „ $\varphi$  – the most beautiful number”**

Name, surname, form \_\_\_\_\_

Most scientists have come to the conclusion that PHI is the most beautiful and complete number in the world. This number is also called the “Golden section” or  $\Phi$  to commemorate the ancient Greek sculptor Phidias who first applied it to the design of sculptures for the Parthenon.



**1. Calculate and write the next 5 numbers in the Fibonacci series :**

1; 1; 2; 3; 5; 8; 13; 21; \_\_\_\_\_

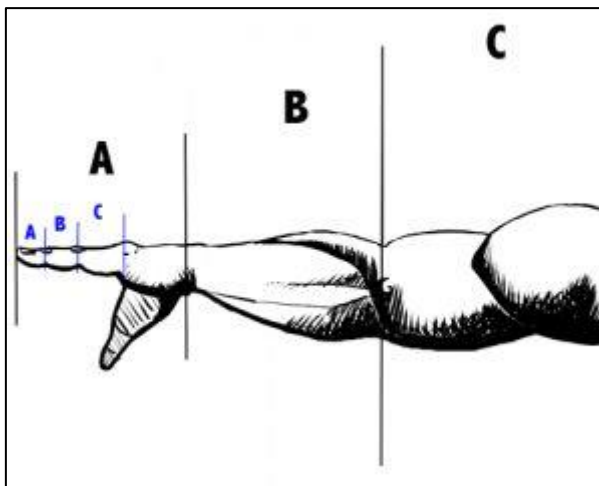
**2. Calculate the 13th number of the obtained series in relation to the 12th number.**

\_\_\_\_\_  
**3. Choose any two numbers, then form a series in accordance with Fibonacci series.**

\_\_\_\_\_  
**4. Calculate the 10th number of the obtained series in relation to the 9th number.**

\_\_\_\_\_  
**5. Write down your observations!**

\_\_\_\_\_  
**6. Do an experiment! Carry out the necessary measurements (see the figure) and calculate the relation  $\frac{A+B}{B} = ?$**



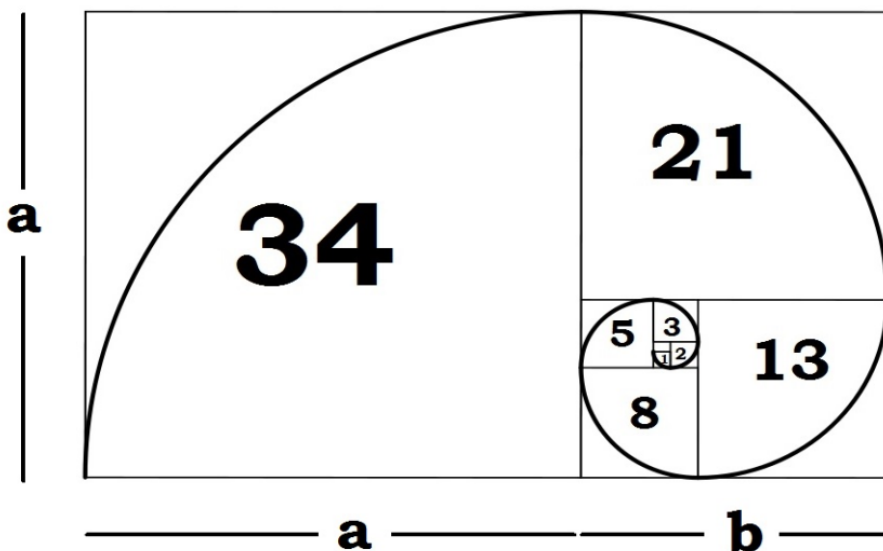
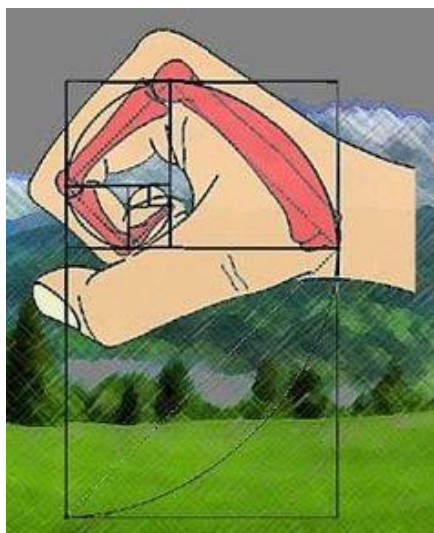
Fill in the table!

A (cm)	B (cm)	A+B (cm)	$\frac{A+B}{B}$

Where is  $\varphi$ ?

\_\_\_\_\_

7. Construct Fibonacci spiral using SKETCHUP program!



8. Now you can print out Fibonacci spiral with 3D printer !

9. Fill in the self-assessment chart !

Criteria	Yes (3 points)	No (0 points)	Partly (1-2 points)
I listened carefully, heard the instructions			
I know what Golden section, number PHI and Fibonacci spiral are			
I succeeded in constructing the Fibonacci spiral using SKETCHUP			
The tasks were interesting and challenging			

THANK YOU FOR YOUR WORK!