Arquinho

Now you are in arquinho, please, notice the fountain next to the statue António Cândido, the one which has the plaques that inform us about the overflows that happened and how height they were. Knowing that on the overflow of 1962, the water level increased 1 meter and 20 centimeters, how many consecutive overflows had to happen to entirely immerse the statue?

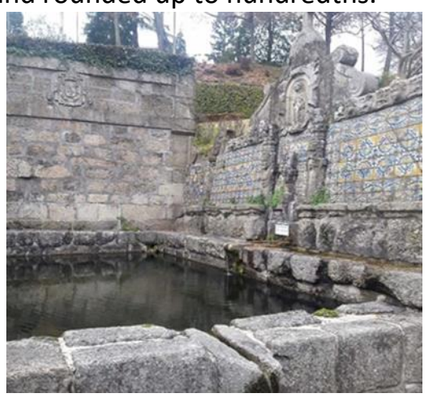
Note: The statue is 2.8 meters tall and the platform where it is inserted is 80 centimeters (height).

R.:

Fountain

Calculate the liters of water that there are in the fountain of "Ponte Nova", knowing that the length is 6,78m, the height is 2,35m and the width is 2,9m.

Present the result in $dm^3$and rounded up to hundredths.



R.:

Saint Peter's church

Knowing that the radius of the clock of the S. Pedro Saint Peter's church is 60 cm, determine the area of the circule circle.

Don't represent the result in decimal form.

R.:

Solar de Magalhães

What kind of isometries are there on the "Solar de Magalhães" ´s front wall? Notice that the columns at the end are not equal.

A) Axial reflection, above an axis dividing the solar's front wall into two equal parts.
B) Translation of the columns, both in the interior and in the exterior.
C) Rotation above a point.

R.:

Mathematical Trail

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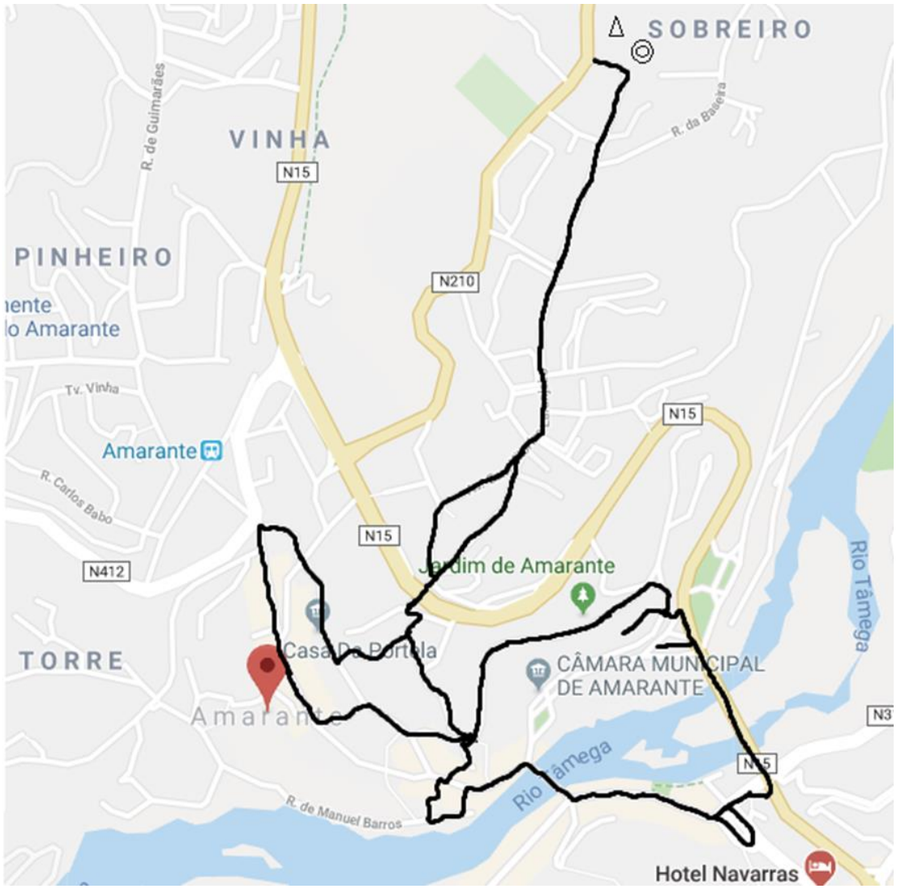


Figure 1- triangle - beginning; circle - end

10ºCT3

Campo-da-feira

If you notice, next to Campo da Feira's fountain, there is an hospital that nowadays is closed. Count the windows in the front wall of the building, excluding the ones in attached structure. You must only count the ones inside the circle in the image. After you've counted them and, admitting that the fountain is a semi-circle, divide the number you've counted by 18 and you will find the fountain's radius.
Now calculate its area. The radius has to be presented in meters and reduce all of calculations to whole numbers.

A) 38 windows and 28 m^2

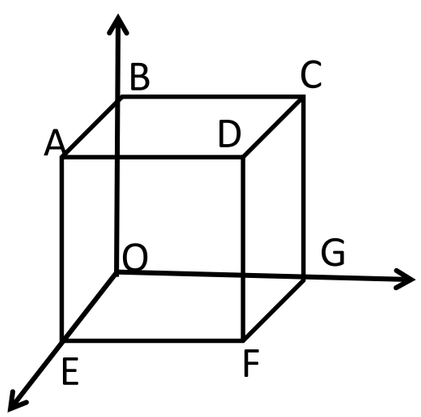
B) 40 windows and 30 m^2

C) 56 windows and 14 m^2

D) 60 windows and 30m²

Centro Cultural de Amarante (CCA)

Determine the coordinates of the vertices of the cube.
Knowing that the edges of the cube are of 50 centimeters:



A(, ,)

B(, ,)

C(, ,)

D(, ,)

E(, ,)

G(, ,)

O(, ,)

Municipal Library

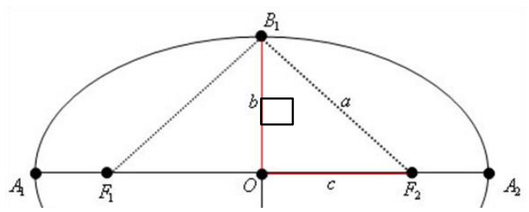
Imagine that you put in a bag all the letters of the name Biblioteca Municipal Albano Sardoeira. Which is the probability of getting the letter i?

S. Gonçalo Bridge

Now, you can see one of the oldest constructions of Amarante. The bridge which has around 50 meters of length that supports a board with four semicircular balconies (varandins) and on the both extremes there are two baroque obelisks that display epigraphic registrations concerning the construction of the bridge and the French invasions episode. This is the landscape that you can see.

Now notice the arch that forms an ellipse. If I tell you that the focus 2 has as coordinates (20,0), which is the height of the bridge?

- $\overline{A1\ A2}$ = 50 metros;
- $\overline{A1\ A2}$ = 2a;
- F2 = (20,0);
- Altura da ponte= b



R.:

Saint Gonçalo Square

Calculate the area of the shadowed picture taken from the Saint Gonçalo's church, knowing that the radius of the semicircumference is 1,5 meters.

Present the answer with one decimal place.

R.:

Casa da Calçada

Determine the area of the largest triangle present at the entrance of Casa da Calçada, round up the result to decimals.

R.: