



VISIT MATH



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Itinerary

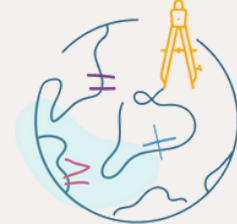


- | | | |
|-----------------|---------------|---------------------|
| 1 Place Léopold | 4 Rue Cronque | 7 Place du Parc |
| 2 Sint-Waltrude | 5 Main Square | 8 Le Manège Theatre |
| 3 Belfry | 6 BAM | 9 ? ? ? ? |

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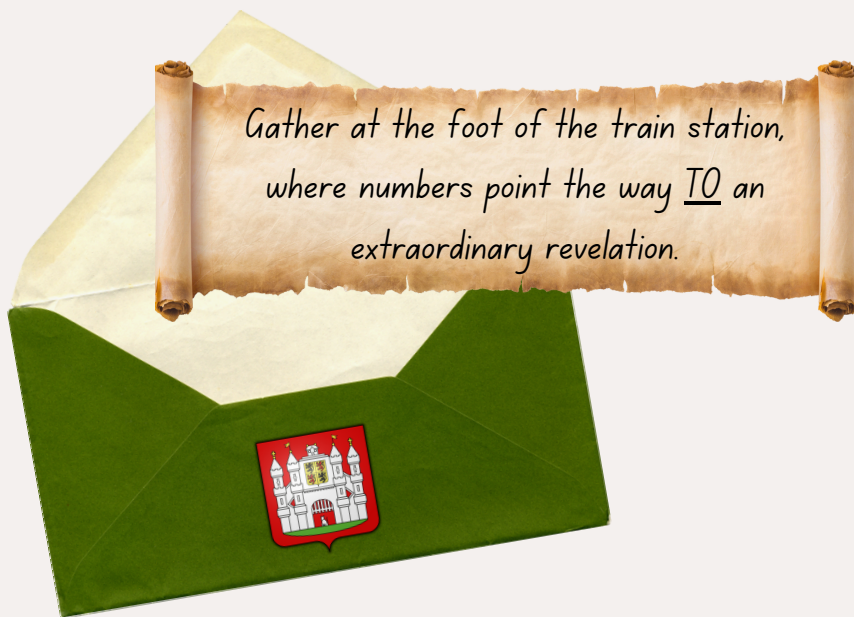
VisitMath Tours MONS



Greetings, young mathematicians, 

Your class received the most enigmatic invitation to participate in a mathematical competition in the picturesque town of Mons.

It all began with a mysterious note bearing the seal of the city on its envelope. Apparently, this letter was sent to the most promising young mathematicians from all over the world...



Intrigued and fascinated by the challenge, you - young mathematicians - gather in Mons to take up this most enigmatic of challenges.

As you solve the riddles, you will **gather letters** that will finally guide you to the secret location of the competition.

Step 1: Where Adventures Begin

As the note indicates, you gather at the foot of the train station.



By the way, this train station was designed by Santiago Calatrava, a famous Spanish architect. From Belgium to the United States, passing by the United Arab Emirates, he created masterpieces of modern architecture worldwide.

The initial budget for the renovation of the train station by Santiago Calatrava was 37 million euros. In 2022, the amount has risen to 327 million euros.



Rounding up, how many times has the budget been exceeded?

If you have the correct answer, this visual element should give a clue for the final step...



Now look around you. Go up the street and head to the magnificent church.

Step 2: Saintly Splendor

Enter the church to discover the following enigma.



The Sint-Waltrude's Collegiate Church is a Catholic religious structure built in the Gothic style, dedicated to Sint-Waltrude, the patron saint of the city of Mons. It is listed as a protected cultural heritage site in Wallonia.



You can observe a magnificent organ at the end of the Collegiate!

Knowing that at 15° Celsius, the approximate temperature inside the church, the sound speed is about 340m/s and that the church is about 115m long and 24,5m high...



How long would it take for the first note of the organ to reach the opposite of the Collegiate and the ceiling?

Choose the correct answer among those propositions:



Answer VA = 0,338 seconds / 0,072 seconds
Answer LE = 0,479 seconds / 0,096 seconds
Answer IT = 1,578 seconds / 1.026 seconds



Now continue up the city streets to the Belfry Park.

Step 3: Tower of Time



The Mons Belfry is listed by the UNESCO! It was built between 1661 and 1672. With its 365 steps, 87 meters in height and 49 bells, it is a true symbol of the city of Mons and a major landmark in the landscape.



Knowing that the Sint-Waltrude's Collegiate Church is 32 meters high, and the Belfry is 87...



What is the ratio between the size of the Belfry and the church?



Select the right answer:

SZ	TJ	MB	LE	FU
1,452	2,856	3,695	2,718	1,246



In the region's dialect, "cromb/combe/conque" means crooked.

This will take you to the street that bears that name, la rue Cronque.

Step 4: Winding way

Now that you stand there, you probably understand why the street is called this way.

Knowing that the street is 98 meters long and that the elevation gain between the top and the end is approximately 10 meters...



Calculate the degree of the street slope.

Select the right answer:



MO



DE



NC



SL



Continue down to the main square to have the next clue.

Step 5: Mons' heart



The Grand Place is the very heart of the historic town. It is paved in the style of old towns and is home to the town hall. Every year, the square is the setting for the "Doudou", a local festivity recreating a battle with a Dragon.



You can observe a strange circle in the middle of the square, a ring of blue stone of 12 meters in diameter.



Calculate the area of this circle.

Choose the correct answer among those propositions:



Answer IE = $113,09\text{m}^2$

Answer JN = $156,74\text{m}^2$

Answer AZ = $98,6\text{m}^2$

With the correct answer in the bag, let's go to the next step!



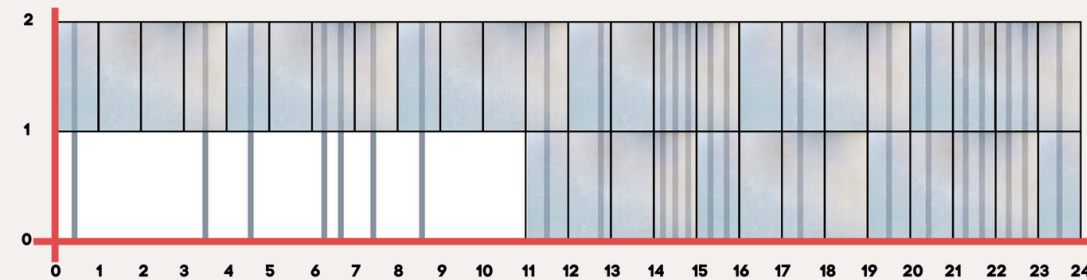
With the Town Hall on your left, move forward and take the first street on your left.

You will discover a glass-made modern façade; it is the BAM, the fine arts museum.



Step 6: bim BAM boom

Here is a graphic representation of the glass facade and its pillars:



Connect points to discover the clue.



In this given order,

- link (12;0), (12;2), (14;0) and (14;2).
- Then, link (17;0), (17;2), (19;0) and (19;2).

When you are done, something should appear on your paper!
It will help you find the final location. 😊



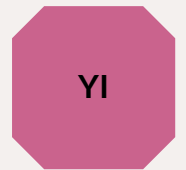
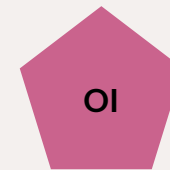
But before that, go to the Place du Parc for the next step.

Step 7: Park Escape

What a lovely park to take a walk, isn't it?
If you stroll for a while, you might discover
that parc has a particular shape.



What do you think?
Which shape is the park?



One more step to decipher to last clue, and then you will be ready!



Let's go the Theatre "Le Manège" then!

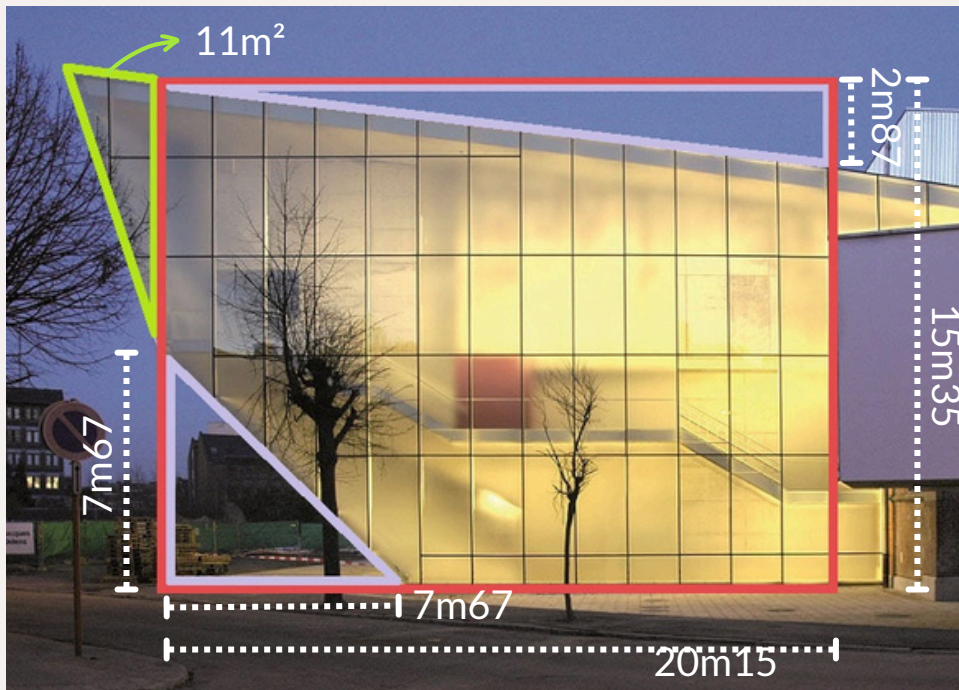
Step 8: Stage of Wonders

Let's get down to business now!

See that nice-looking glass building? It's a Theatre.

You are going to calculate its area.

So here is a picture of the building with different measurements:



Calculate the area of the glass facade.

Don't worry, I will help you a little bit! 🤔



To do so, add the area of the red shape to that of the green shape.

Then, subtract the area of the two purple shapes.

Choose the correct answer among those propositions:



Answer VX= 324,8 m²

Answer HU= 283,9 m²

Answer SE= 261,97 m²

Congratulations! 🎉

You passed all the steps that will lead you to the secret location of the mathematical contest.



Go there and see if other pupils were able to unveil the location.

Step 9: You got it!

Dear young mathematicians,
Gather all the letters from the correct answers.

If you answered correctly, you should be in front of a big cylindric shape!

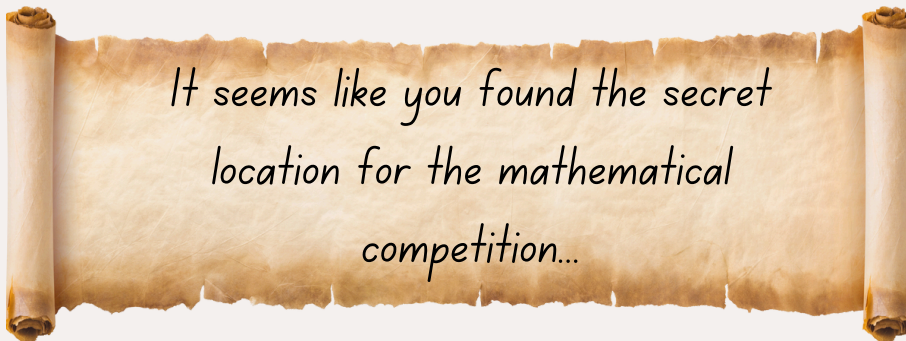


It is a defensive tower
built in 1358 and 1359.
This tower was part of
the ramparts of the
town of Mons.



I knew you could do it! 🍊

You find this piece of paper on the floor:



*It seems like you found the secret
location for the mathematical
competition...*

And as you are the only group standing at the secret location, I guess that makes you the only competitor!

Therefore, this last enigma decides who is the winner of this contest between all of you.

Here are some dimensions of the tower:

- 18m diameter
- 10,4m high
- 4m wall thickness



Calculate the amount of water
needed to fill the tower.

Give the answer to your teacher, and they will tell you who the winner is!

But no matter who got the answer the fastest, you are all budding mathematicians!

