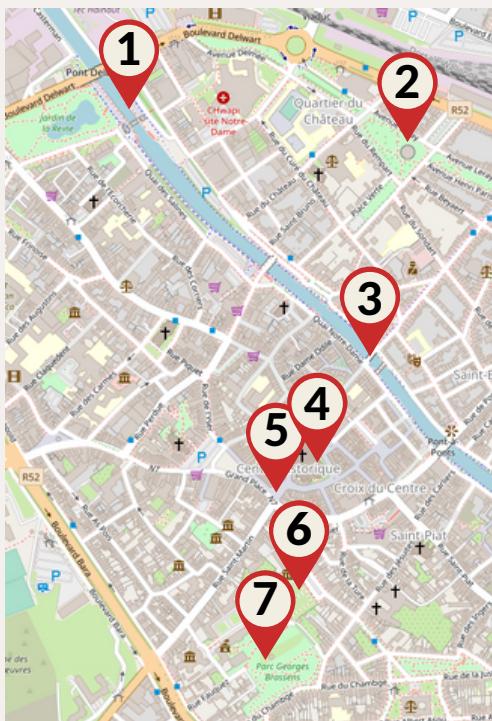


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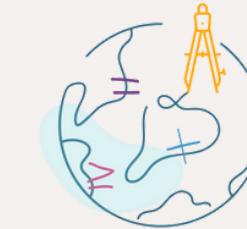


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Itinerary



- 1 Pont des Trous
- 2 Henri VIII Tower
- 3 Notre-Dame Lift Bridge
- 4 Notre-Dame Cathedral
- 5 Belfry
- 6 Queen Astrid Park
- 7 George Brassens Park



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Welcome to Tournai, a city brimming with secrets waiting to be unravelled!

You and your three adventurous friends have a penchant for investigating enigmatic mysteries. Your latest quest begins with the discovery of a **mysterious object** in the Scheldt River at the foot of the **Pont des Trous**.



City authorities are overwhelmed and offer an award to those who can trace the object's origin, as they suspect it was stolen from a place adorned with **green paint**.

Follow the trail of green paint from one intriguing location to another to uncover the truth behind this enigmatic artefact's origins.

Step 1: The mystery begins

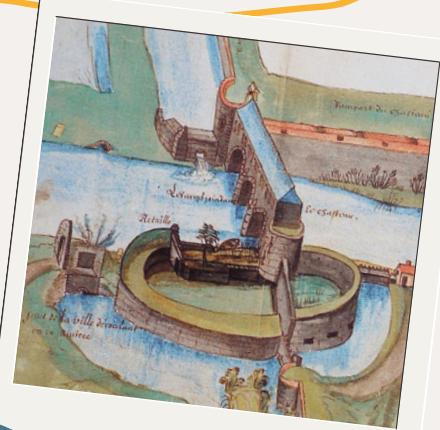


The Pont des Trous is one of Belgium's most prestigious medieval architectural treasures!

Built at the end of the 13th century, this water gateway was an essential part of Tournai, defending the city along the Scheldt.



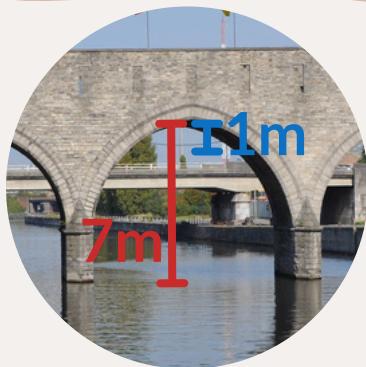
Unfortunately, it was blown up at the start of the Second World War. It was rebuilt in 1948, facilitating navigation and stimulating the river economy. The Pont des Trous was also modified in 2023 to allow larger boats to pass through.



Whoever threw this object in the river must have been around because there are green stains everywhere!



The Pont des Trous spans the Scheldt River with a central arch that is 7 meters high above water. Ensuring sufficient clearance for boats to pass underneath is crucial! Therefore, ships should let one-meter height free for security.



A captain wonders whether his boat can pass underneath the Pont des Trous. The captain wants to store 2.4m-high containers. The boat deck is 1 meter above the water surface.



How many containers can be placed on top of each other for the boat to pass safely underneath the Pont des Trous?



What would be the security margin?



Make sure you have the right answer, then follow the green paint to get to the root of the object. It will lead you to the Henri VIII Tower!

Step 2: Follow the paint



The Henri VIII Tower was originally built following the English occupation of the city between 1513 and 1519. During this short period, King Henry VIII of England constructed a tower along the city's fortifications, integrating it with the secondary city walls..



The tower served as both an artillery tower and a prison. Nowadays, it remains the only vestige of English architecture from that era in the Tournaisis area.

Resolve this calculus before going on with your adventure:

Henri VIII Tower is 21m high and 27,5m in diameter.



What is the volume of liquid you would need to fill the tower?

Great job! 😊



The thief must have hidden here before heading to the Pont des Trous.
Let's continue following the paint; it seems to lead to Notre-Dame lift bridge!

Step 3: Up and Down



The Notre-Dame Lift Bridge was first built in the 15th century but was relocated in 1685. Over time, it evolved from wooden to steel mobile bridge due to increased river traffic.



The bridge suffered dynamite damage twice during wars, in 1918 and 1940, leading to temporary replacements. Finally, in 1955, the current bridge was reconstructed and remains the city's only movable bridge.

The bridge is closed for 6 minutes on average for each passing boat.

Working on the assumption that the bridge rises 15 times in a day...



How long does the bridge remain closed every year? (In a year of 365 days)? Give a precise answer in days, hours, minutes and seconds.



Now, keep on retracing the thief's steps and head toward the massive Cathedral.



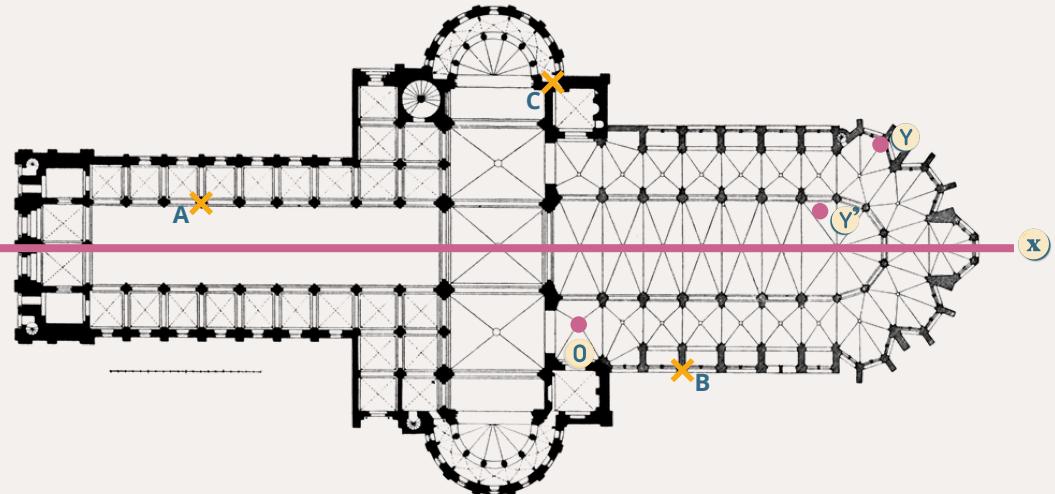
Step 4: Architecture Masterpiece



The Notre-Dame Cathedral is a masterpiece of Gothic and Roman architecture with a rich history dating back to the 12th century. Its construction began in 1146 and took several centuries to complete. This stunning Cathedral has witnessed centuries of cultural and historical evolution, from its consecration in the presence of Henry VIII to the various architectural additions and renovations. Today, it holds a UNESCO World Heritage status.



Here is the floor plan of the Cathedral:



 Draw the point A' , orthogonal symmetry of A with respect to line x .

 Draw the point B' , central symmetry of B with respect to the centre O .

 Draw the point C' , symmetry of C with respect to the translation transforming Y in Y' .



Well, it seems there is a big green paint stain at the foot of the Belfry. Go there to follow the mysterious object's trace.

Step 5: Step by Step



The Tournai Belfry is the oldest in Belgium! It is a historic treasure that traces its origins back to the 12th century. Originally constructed as a watchtower, it evolved over the centuries and served as a prison, bell tower, town hall, etc. Today, as a UNESCO site, the Belfry reflects Tournai's rich history.

Someone carrying a strange object was reportedly spotted at the top of the Belfry. They probably wanted a better view of the city to find an escape path...



Indeed, there is green paint on the steps!



The Belfry has 257 steps.
On average, it takes 0,5 seconds
to climb a step...



How many minutes would it take to get to the top of the Belfry with a 2-minute break midway?

Well, he couldn't have gone far in such a short time...



I can see some green paint heading towards Queen Astrid Park. Hurry, you are getting warmer!

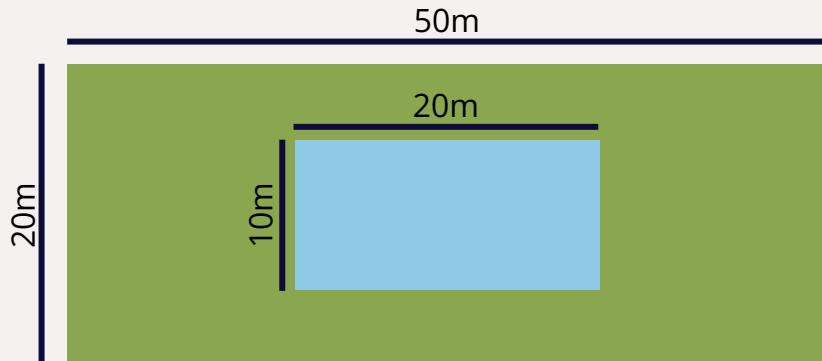
Step 6: Green Park

What a nice symmetric park! The gardeners must have a lot of work here.

Put yourself in their place, and imagine you need to sow grass on the right side of the park.

To reduce cost, you must calculate to exact amount of seeds to cover the area.

Here is a simplified map:



Now, knowing that you need 20g of seed for $1m^2$...



How many kilograms of seeds do you need to sow the grass?

Great job! 😊

The thief must have gone in the grass because the colour seems to be disappearing...



Wait... Is that green paint I see near George Brassens Park?
Head there to unveil the mystery!

Step 7: Mystery's outcome

I'm sure the mysterious artefact comes from here!

Look around to discover where it was stolen from.



Here is a clue:

Look for something with an octagonal shape and green paint ...

Congratulations! You most probably discovered the location!



After a phone call to let the authorities know, they give you an enigma to solve to deserve the award.

They inform you that in 1911, it cost 12000 Belgian francs to build the Kiosk.

Knowing that 1€ = approximately 40 Belgian francs...



How much did it cost in € to build it?

Well done!

With this correct answer, the authorities offer you the city's eternal gratitude! Here is your card of exemplary citizen!



You and your three adventurous friends can now find a new mystery to solve.