VISIT MATH

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Itinerary

1. Lille Flandres station
2. Grand' Place
3. Old Chamber of Commerce
4. Rue de la Clef
5. Place du Lion d'Or
6. Notre-Dame de la Treille

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VisitMath Tours
LILLE

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Before the tour: what to take into account

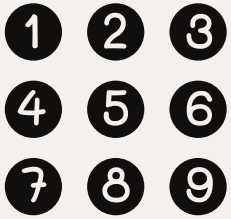
Hello there, and welcome to the wonderful city of Lille! Did you have a nice trip? My name is Jean, and I will be in charge of your training today. What for? Well, to become a successful merchant, like I am, of course!

I have managed to purchase a time-travelling machine and I occasionally visit other centuries to teach people about trade. Money can buy anything these days! I cannot stay too long, so let's get started.

The old town in Lille is a gorgeous and colourful place, and is often crowded when the Grande Braderie – a flea market that covers half of the city – takes place! However, despite the fact that these streets are very popular among the locals, note that they are not easily accessible to people in wheelchairs due to the narrow pavements and the cobblestones that create uneven roads.

Please remember that the city tends to be quite busy on the first weekend of September, since this is the Grande Braderie weekend: the streets are overcrowded! In December, the Christmas celebrations could make parts of your observations more difficult too.

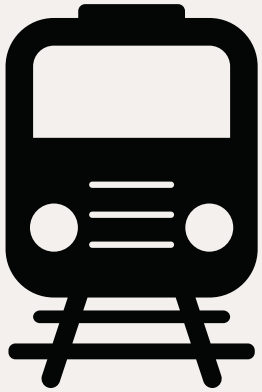
I would suggest you use a calculator. I don't need one, but maybe you do...
In order to complete the second step, bring along two sticks of the same length (approximately 20 cm) or two rulers, either two per pupil if this tour is an individual activity or two per group.



Back in the day, the train did not exist, so getting new clients was much harder. Ah, I would have been even more successful... The first step of your training will take place in front of the Lille Flandres railway station. Stand on the forecourt to see the Lille Europe station from afar and rue Faidherbe.

Step 1: Warm-up

What better place to start the tour than the railway station? Take a look at the façade of the building. It may surprise you, but the original design for the entrance was made for the Gare du Nord in Paris, which is one of the main railway stations in the capital city.



And, similarly to its Parisian counterpart, the Lille Flandres railway station is one of the most busy in France! It is estimated that about 22 million passengers travel via this station every year.

About 2,8 million of those passengers take a train to reach Amiens.
About 5,1 million of those passengers travel to Paris.
About 1,3 million people go to Dunkirk.
About 1,9 million passengers travel to Tournai.
The other passengers travel to the many other destinations that the station has to offer

Instructions:

Calculate the number of passengers going to each destination every day. What is the proportion of passengers going to Paris compared to the total amount of passengers? Illustrate this with a pie chart.

Next:

What would be the odds of talking to someone who has just come back from Tournai? If you were to pick 3 passengers at random, what would be the odds of picking only people from Paris? If you were to pick 4 people at random, what would be the odds of picking 1 person from Dunkirk and 2 from Amiens?

Knowing how many potential customers you can get is very important when you want to start your trade!

Let's go back to a time I know better: walk Rue Faidherbe to access Lille's most famous square: the Grand' Place!

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Step 2: A stroll on the Grand' Place

The Grand' Place (or main square) is the most famous place in Lille. People like to stroll and sit down at one of its numerous bars and restaurants, unless they want to head to the opera, the theatre or the bookshop! You can see many monuments from this place: the statue on top of the fountain which represents a goddess about to defend the city, the opera which has actually been built in the 20th century only, and the belfry that towers above the Chamber of Commerce.

The statue is particularly interesting to us: it was built in order to commemorate the sacrifice and resistance of the Lille inhabitants during the 1792 war, and issued on a tall column which was then surrounded by a fountain. But... how tall is it, exactly?

Use Thales's theorem to estimate the total height of the column. Use the sticks or rulers you brought along to estimate its height.
Next, estimate the width of the column. Consider the pillar is circular: what volume of stone was used to build it?

The woodcutter's cross:
This technique can be used by any person who wants to calculate the height of a tall structure. Stand up and place the two rulers at a straight angle, in front of your eyes in such a way that the extremities of the vertical ruler match the extremities of the tower. Look at the sequence on Thales' theorem for more information!

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I have a few architect friends who would be quite amazed by your skills!

Turn around to take a look at the old Chamber of Commerce. You may stay in the open courtyard if there is enough room for the whole class, don't be too loud to avoid disturbing the booksellers!

Step 3: The old Chamber of Commerce

This building is famous in Lille: first of all, this is one of the most beautiful examples of Flemish architecture, and it is now the home of booksellers, chess players and tango dancers. What a dream stage to practice your favourite activities!

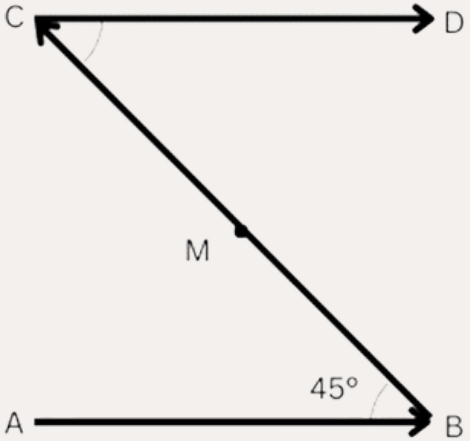
Let me dress into something more appropriate for the occasion. One cannot visit the Chamber of Commerce dressed as a commoner...

Ah, look at these dancers. I hope you're enjoying the show: they have to make very precise movements.

Instructions:

The patterns of tango ask the dancers to adapt to their environment, or else they might crash into the bookshelves around the room! The inner yard is not that big: it is approximately 15 meters wide and 21 meters long. For a contest, the participants are asked to start dancing from the middle of the room.

Here is what their steps should look like. The first and last steps need to be parallel to each other, and of course, have the same length. If not, the whole choreography is compromised!



Consider A to be the contestants' starting point and M the symmetry centre of the path they must follow. Suppose that the length of the first part of the dance, [AB], is 3 meters. Write down the length of all the dancers' moves on the figure as well as the angles. Would they have enough room to dance?

Suppose the length of the first part of the dance is 6 meters instead. Would the dancers have enough room to perform?

It did not look bad at all... I used to be quite a dancer too, but you wouldn't know the steps. Anyway, let's get back to business.

Head over to the streets of the Old Town: Rue de la Clef, or Rue de la Grande Chaussée. You may walk these streets as you work on the next step, they are really nice to look at!

Step 4: The cobblestones of the Old Town

I suspect you call this the "Old Town", but to me, this is... well, the "actual town". I am not necessarily fond of cobbled streets, but it still looks better than your tarmac!

Do you like walking the streets of the old town? Most of the buildings there were built in the 17th or 18th century, and while the ground floor of most of the houses is occupied by shops nowadays, people still live in the upper floors, so don't be too loud! Beneath your feet, the streets are paved with cobblestones.

Let's simplify the map of the old town: consider that there are two streets that are 1 km long and 15 m wide, one street that is 1,5 km long and 20 m wide, ten streets that are 250 m long and 10 m wide, and a public square with 100 m sides.

Then, in order to account for all the smaller streets, add 50% of the number of cobblestones to your result: you will then have an approximation of the total amount of cobblestones that pave the streets of the old town!

A cobblestone measures about 15x10 cm, and there is a 3 cm gap between all cobblestones.

A little piece of advice:
You will need a calculator for this activity, as the numbers can become quite impressive! We are talking about a whole small town after all...

That's a lot, isn't it? And guess what? I sold most of those cobblestones. One day, you may be as successful as me if you follow my advice!

Let's go to Place du Lion d'Or and Place Louise de Bettignies for the next step: you should already be close to them.

Step 5: Rest on the ground of the first squares

The old town in Lille has two major squares that are full of history. First, Place du Lion d'Or (Square of the Golden Lion) was part of the city's early days as it dates back to the 12th century!

Then, Place Louise de Bettignies, which was re-named after a famous French spy, is a slightly more recent yet much larger square, and was created in the 15th century.

Today, both squares are surrounded by shops, restaurants and bars. The oldest building on these grounds did not escape this fate: at the time of writing, its ground floor is occupied by a shop, and there is no doubt that if that shop were to close down, it would be replaced by another one. But... which is it? Solve the clues to find it!

This place is so old, even I wasn't born at that time! Well, just like the rest, I helped improve it of course!

I would suggest you take a piece of paper and draw the map of your surroundings as you go. You'll have to take the trees and houses into account.

First clue:
Start by going to the Louise de Bettignies square, and spot the four houses bearing the traces of the Flemish mannerist architecture. They are easy to spot in their gold and crimson attire. Draw each median, where about do they cross?

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These houses are a perfect example of what the Flemish architecture looks like. They're gorgeous, right?

Second clue:

They are three where the lines cross, and the last one stands alone on the Square of the Golden Lion: what are they? Walk from the three to the one, and stop after two thirds of the distance. Look for a house, it is neither white, nor green or yellow, what is its number?

Third clue:

Oh, I forgot to tell you, the house we're looking for dates back to 1145. How convenient: multiply the first number with the second, then the third with the fourth, then subtract the second result from the first one. Add your result to the second clue number and… well, you were already near that house anyway!

Which house do you have to look at? Does it look well preserved to you?

Of course, it looked better back in the day. But this house has withstood the test of time!

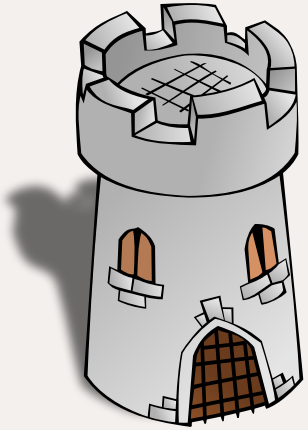
Wait, what am I hearing? It's the sound of the bells! Quick, I don't have much time left. Let's reach the final step!

Go to Rue de la Monnaie and turn left as soon as you can. You should soon see a massive building in front of you!

Step 6: The lost bells of the Cathedral

I have to change my clothes again... We'd better keep a low profile in a church.

I've seen this little chapel grow throughout the centuries... Look at it now! It's a cathedral!



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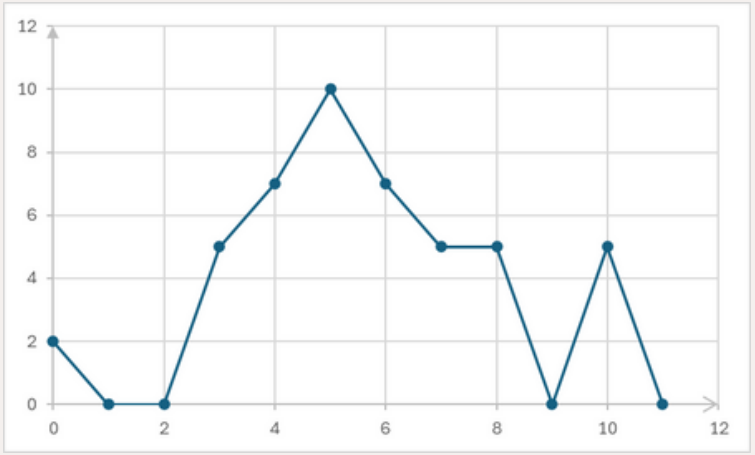
What a sight to behold... The Lille Cathedral is both an expression of modern architecture – it was inaugurated in 1999 – and an architectural monstrosity according to some. What do you think of it? Wait until you go inside to make your opinion!

The cathedral has a little twist: due to the construction timeline, the bells are located in an unusual place. Use the graph on the next page to find them!



First of all, trace the function f(x)= (1/2)x -1
Next, trace the function f(x)= 40/x
Where do both lines cross? Look at the graph and your surroundings. Where do you think the bells are hidden?

"For whom the bell tolls", am I right? I need to travel back to my time. You are a promising apprentice, don't let me down and put your skills to good use!

I have heard that you can partake in some other activities of the sort. You should check them out, they look interesting too!