

Enchanted Borough

Group Members:

Member 1: Chloe Perez

Member 2: Ashley Brooks

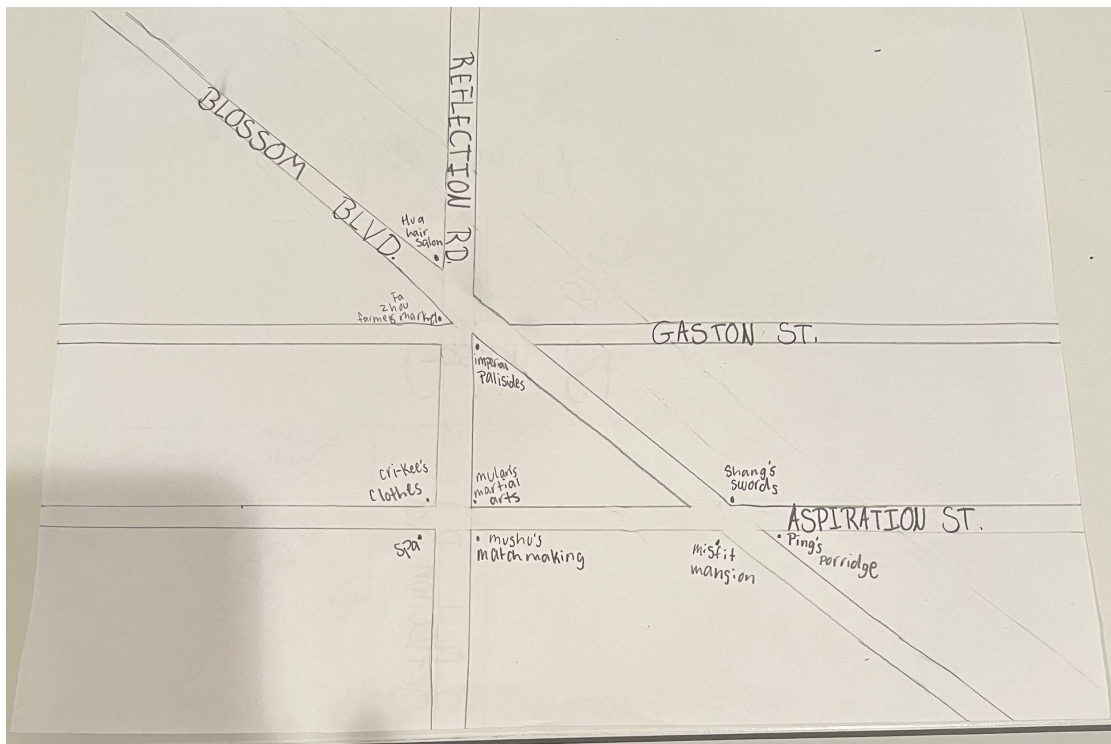
Member 3: Lailani Rodriguez

Welcome to Enchanted Borough! We were founded in 1991, starting with The Beauty and The Beast Dream. Thankfully we expanded and added on Tiana, Mulan's Mystic Manor, and finally Elsa... to come up with four quadrants that you'll be sure to love. You'll learn about the ins and outs of the borough, and explore amazing things! The Enchanted Borough is known for having the most beautiful flowers you'll ever see at The Enchanted Flower Shop, the best haircuts from Hua Hairsalon, some amazing cuisine at Tiana's Restaurant, and more! Be sure to check everything out.



Designer: Chloe Perez

Hello and welcome to Mulan's mystic manor! We offer a wide variety of activities within our land! Make sure to stop at Hua Hair Salon for the haircut of your dreams! After, you could take a stroll down to Cri-Kee's clothing and get custom clothes that suit your personal preference. Or maybe if you're having a difficult day, you could stop by our soothing spa which never fails to relieve our customers from their anxiety and stress. But of course, if you ever get famished from all the sightseeing, come visit Ping's porridge where they sell the most comforting and delicious porridge. We hope you enjoy your stay at Mulan's mystic manor.



Places you'll find in Mulan's Mystic Manor:

- ♡ Mulan's martial arts
- ♡ Hua Hairsalon
- ♡ Fa Zhou farmer's market
- ♡ Imperial palisades
- ♡ Cri-Kee's clothes
- ♡ Soothing spa
- ♡ Mushu's matchmaking
- ♡ Shang's swords
- ♡ Misfit mansion
- ♡ Ping's porridge

Instructions:

- There are two main horizontal roads running West to East that are parallel to each other. The road that's closest to North running West to East is Gaston St. The road closest to the south is Aspiration St.
- The two main parallel roads are perpendicular to a third road called Reflection road.
- Then, there is a fourth road, Blossom Boulevard. Blossom Boulevard intersects all three roads and is a diagonal road that heads Northwest. Blossom Boulevard creates two right triangles with Reflection Road and two acute angles that are vertical to each other.
- At the two acute vertical angles formed by Blossom Blvd, Reflection road and Gaston St, there is a luxurious apartment complex named Imperial Palisades, and a hair salon called Hua Hair Salon.
- Hua Hair Salon and Fa Zhou's farmers market form adjacent angles.
- On the Southwest corner of Aspiration St, there is our soothing spa. Corresponding to the soothing spa, you will find Misfit Mansion on the Southeast corner of Aspiration St.
- Misfit Mansion forms a linear pair with Pings porridge.

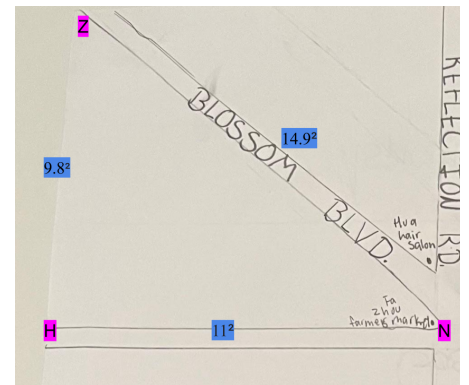
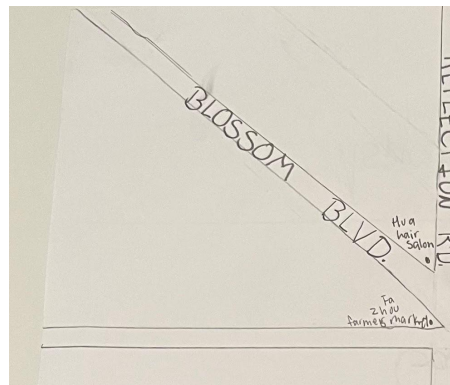
- Shang's sword is found within the obtuse angle formed by Blossom Blvd. and Aspiration St. It is in the Southeast corner.
- If Reflection Road is a transversal through Gaston St and Aspiration St, Hua hair salon and Mushu's matchmaking form exterior angles.
- If Reflection Road is a transversal through Gaston St and Aspiration St, Hua hair salon, Imperial Palisades, and Mulan's martial arts form consecutive angles.
- Imperial palisades and Cri-Kee's clothing form alternate interior angles on Reflection Road.

Let's explore the more precise details of Mulan's mystic manor and look into some of the construction that went into building our manor!

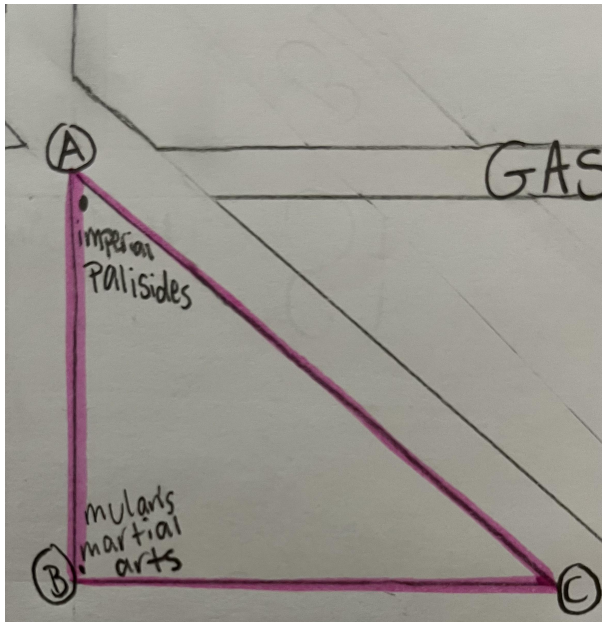
$$9.8^2 + 11^2 ?$$

$$96.04 + 121 ? 222.01$$

$$217.04 < 222.01$$



In this equation, I took all three sides from $\triangle ZHN$. As displayed in this equation, you can see that it proves that this triangle is an acute triangle. But really, the triangle I was solving for is a right triangle. This displays that when human error occurs when measuring, there is a strong possibility that it can cause miscalculations in your results. This means that your results may not always be 100% accurate.



STATEMENTS	EXPLANATIONS
AB=6.9 BC=8.4	Given
$a^2 + b^2 = c^2$	Pythagorean theorem
$(AB)^2 + (BC)^2 = (AC)^2$	Substitution
$(6.9)^2 + (8.4)^2 = (AC)^2$	Substitution
$47.61 + 70.56 = (AC)^2$	Simplifying
$118.17 = (AC)^2$	combine like terms
$10.9 = AC$	Square root

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I used the exterior angle theorem and triangle sum theorem. In the photo, you can see that $5+9x$, the vertical angles of 40 degrees and the right angle which equals 90 degrees are given components that will benefit in solving for Y in this equation. First, we know that a triangle is 180 degrees. So the equation would be:

$$5 + 9x + 40 + 90 = 180$$

When solved, the answer is: $X = 5$.

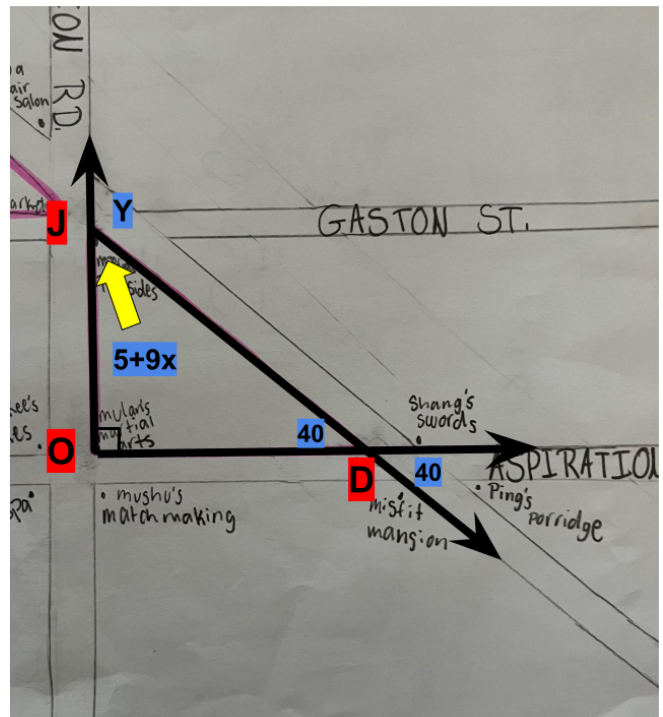
Now that we know that $X = 5$, we can substitute the X in the equation $5+9x$ for:

$$5+9(5) = 50$$

Since we now know that angle J is equal to 50, we can solve for why. Angle J and angle Y are a linear pair, we can solve for Y. A linear pair adds up to 180 degrees. So to solve for this, subtract 50 from 180 and the answer is 130 degrees.

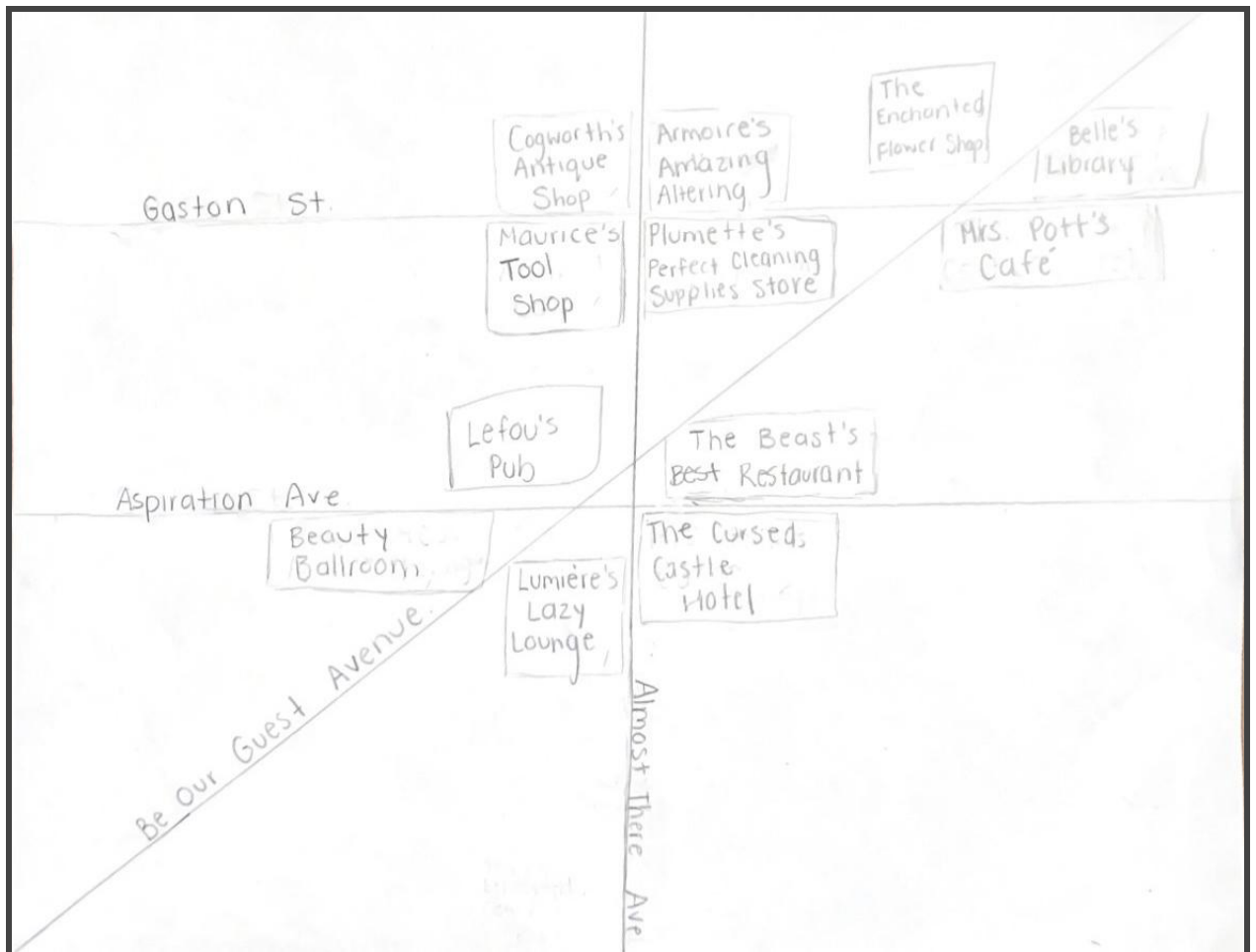
Y = 130 degrees.

We hope you enjoyed your stay at Mulan's mystic manor! It was a pleasure having you! Enjoy your time exploring the rest of the Enchanted Borrow and come visit us again!



Designer: Lailani Rodriguez

Be Our Guest at The Beauty and The Beast Dream! Bring flowers to your lovely someone and head to the Enchanted Flower Shop. They will be the best flowers you'll ever come across in the entire borough, and ever! Maybe take them on a date to the Beast's Best Restaurant, it has been #1 since we were founded in 1991. If that's not your kinda vibe, then head to Mrs. Pott's Café. Whatever you may need, you'll always be sure to find something at The Beauty and The Beast Dream!



Places You'll Find In The Beauty and The Beast Dream:

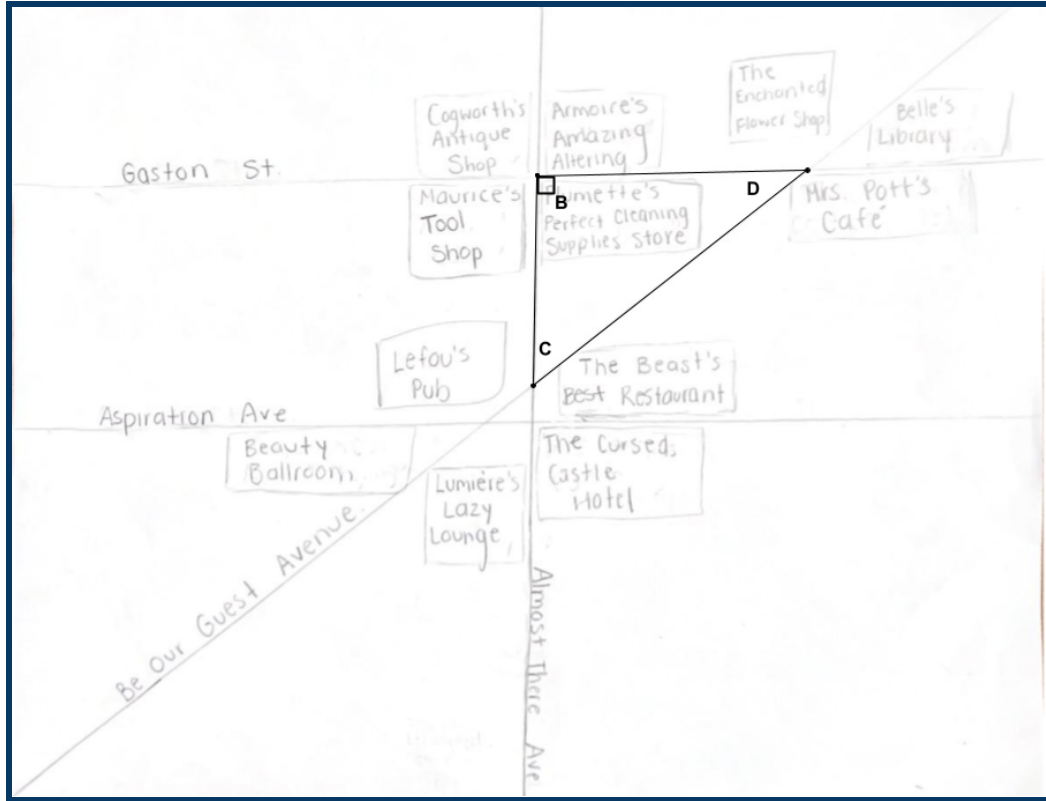
Armoire's Amazing Altering
Beauty Ballroom
Belle's Library
Cogworth's Antique Shop
Lumière's Lazy Lounge
Maurice's Tool Shop
Mrs. Potts Café
Plumette's Perfect Cleaning Supplies Store
The Beast's Best Restaurant
The Cursed Castle Hotel
The Enchanted Flower Shop

Instructions:

- Two main ways going east to west are parallel to each other. The one to the north is Gaston Street, and the one to the south is Aspiration Street.
- The two parallel streets are perpendicular to Almost There Avenue, which cuts through them in the middle of this quadrant, Beauty and The Beast Dream.
- A fourth way, Be Our Guest Avenue, starts in the southwest corner of Enchanted Borough heading in the northeast, intersecting Almost There Avenue in the center of Beauty and Beast Dream, and creating an obtuse and acute angle with Gaston Street. Be Our Guest Avenue, Almost There Avenue, and Gaston Street create a right triangular plot of land.
- At the two pairs of vertical angles formed by Gaston Street and Almost There Avenue, Cogworth's Antique Shop was constructed across from Plumette's Perfect Cleaning Supplies Store and Armoire's Amazing Altering was constructed across from Maurice's Tool Shop.

- At the obtuse angle to the east of Armoire's Amazing Altering, is The Enchanted Flower Shop.
- The Enchanted Flower Shop forms a linear pair with Belle's Library to the east.
- The Enchanted flower shop is vertical to Mrs. Pott's Café, which creates a linear pair with Belle's Library.
- Since Be Our Guest Avenue is the transversal through Aspiration Street, Almost There Avenue, and Gaston Street then Belle's Library and Beauty Ballroom form alternate exterior angles.
- Beauty Ballroom is adjacent to Lumière's Lazy Lounge.
- Lumière's Lazy Lounge is adjacent to The Cursed Castle Hotel and vertical to The Beast's Best Restaurant.
- Since Almost There Avenue is a transversal, The Beast's Best Restaurant, and Plumette's Perfect Cleaning Supplies Store form alternate interior angles while Maurice's Tool Shop forms adjacent angles with Plumette's Perfect Cleaning Supplies Store.
- Maurice's Tool Shop is consecutive to Lefou's Pub.
- Lefou's Pub corresponds to Cogworth's Antique Shop.

Let's dig deeper into Beauty and The Beast Dream, by examining pieces of the land so you can get the best experience as you visit this part of the borough!



You might be wondering, how far are The Beast's Best Restaurant and Mrs. Pott's Café? Well, let's figure it out by using the Pythagorean theorem!

<u>Statements</u>	<u>Explanations</u>
$BC = 5.6 \text{ cm}$ $BD = 7.3 \text{ cm}$	Given
$a^2 + b^2 = c^2$	Pythagorean Theorem
$5.6^2 + 7.3^2 = DC^2$	Substitution
$31.36 + 53.29 = DC^2$	Simplify
$84.65 = DC^2$	Combine Like Terms
$9.2 = DC$	Square Root

By using Pythagorean Theorem, we were able to find that The Beast's Best Restaurant and Mrs. Pott's Café are 10 cm away from each other.

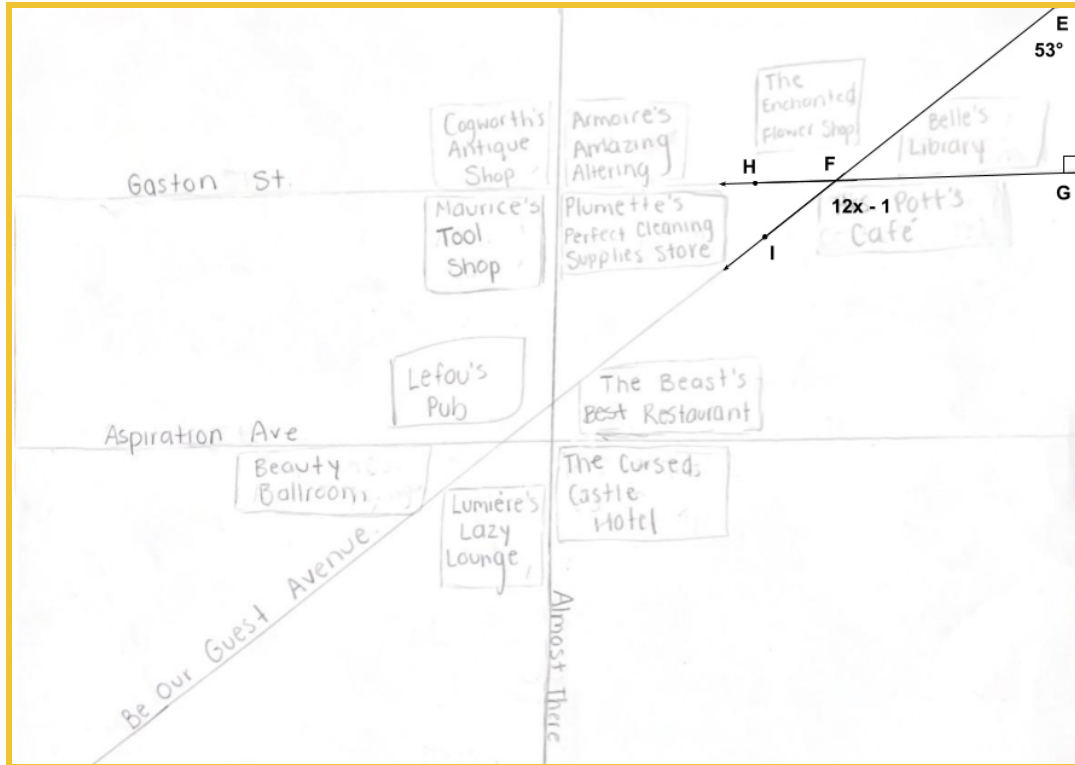
Just to be super safe, let's double-check that measurement!

$(5.6)^2 + (7.3)^2 = (9.2)^2$	Substitution
$31.36 + 53.29 = 84.65$	Combine Like Terms
<u>$84.65 = 84.65$</u>	Check!

When checking our measurement, we can see that the plot of land created by Be Our Guest Avenue, Gaston Street, and Almost There Avenue forms a right triangle using Pythagorean Inequalities.

$(5.6)^2 + (7.3)^2 ? (9.2)^2$	Substitution
$31.36 + 53.29 ? 84.65$	Combine Like Terms
<u>$84.65 = 84.65$</u>	Check for triangle type!

What does the angle formed by Be Our Guest Avenue and Gaston Street measure up to, where Mrs. Pott's Café is located? Let's find that out by using triangle theorems! Triangle Angle Sum Theorem and Exterior Angle Theorem.



<u>Statements</u>	<u>Explanation</u>
$m\angle FEG = 53^\circ$, $m\angle EGF = 90^\circ$, $m\angle IFG = 12x - 1$	Given
$m\angle FEG + m\angle EGF + m\angle EFG = 180^\circ$	Triangle Angle Sum Theorem
$53 + 90 + m\angle EFG = 180^\circ$	Substitution
$143 + m\angle EFG = 180^\circ$	Combine Like Terms
$m\angle EFG = 37^\circ$	Subtraction Property of Equality
$m\angle EFG + m\angle IFG = 180^\circ$	Linear Pair
$37 + 12x - 1 = 180$	Substitution
$36 + 12x = 180$	Combine Like Terms

$12x = 144$	Subtraction Property of Equality
$x = 12$	Division Property of Equality
$m\angle IFG = 12(12) - 1$	Substitution
$m\angle IFG = 143^\circ$	Combine Like Terms

The angle where Mrs. Pott's Café is located measures up to 143 degrees!
Using Exterior Angle Theorem let's double-check that measurement.

<u>Statements</u>	<u>Explanations</u>
$m\angle FEG = 53^\circ, m\angle EGF = 90^\circ$	Given
$m\angle FEG + m\angle EGF = m\angle IFG$	Exterior Angle Theorem
$53 + 90 = m\angle IFG$	Substitution
$143 = m\angle IFG$	Combine Like Terms/Check

I hope you had a wonderful time at Beauty and The Beast Dream. Sadly it is almost the end of your travels in Enchanted Borough, but don't worry you still have one more amazing stop (Olivia's quadrant)!

Conclusion:

Through the creation of this project, our group learned that it takes a lot of communication and teamwork to get things done well, especially within a time limit. We found trial and error to be important as well. It helped us learn to adjust our thinking to situations in which we found ourselves stuck.

As a group, we communicated well to get checkpoints done on time. We did this by creating group chats to stay in touch. We made sure that the map contained all of the qualifications for a grade that would more than satisfy us all. Throughout the project, we built off each other's ideas to make our lives easier.