

Video Game Landia

Names of all Group Members:

Member 1: Lucia Meade

Member 2: Hannah Weldon

Member 3: Owen Munkelwitz

Member 4: Steven

Introduction:

Welcome to Video Game Landia! Video Game Landia is a multiverse of worlds. Video Game Landia is divided into four unique districts which include Wii Sport Resorts, Super Mario Bros, Zelda and Valorant. Video Game Landia is full of festivities and unforgettable memories waiting to be discovered. In Wii Sport Resorts test your limits by jumping off planes, surfing across the island's ocean or sword fighting in a colosseum. In Super Mario Bros, visit Mario inspired locations, from the local Fire Flower Bakery to zipping down the treacherous slopes of Mount Wario. In Zelda, an endless world awaits extending from the Gerudo Highlands to the Dueling Peaks. Explore the ruins of ancient Hyrule or drink a mug of a suspicious beer at Beetles Bar. In Valorant, grab your weapons and ammo and gain control of the arena. Fight alongside your fellow teammates until one team remains. Now go on, explore these new worlds! Your adventure has just begun!



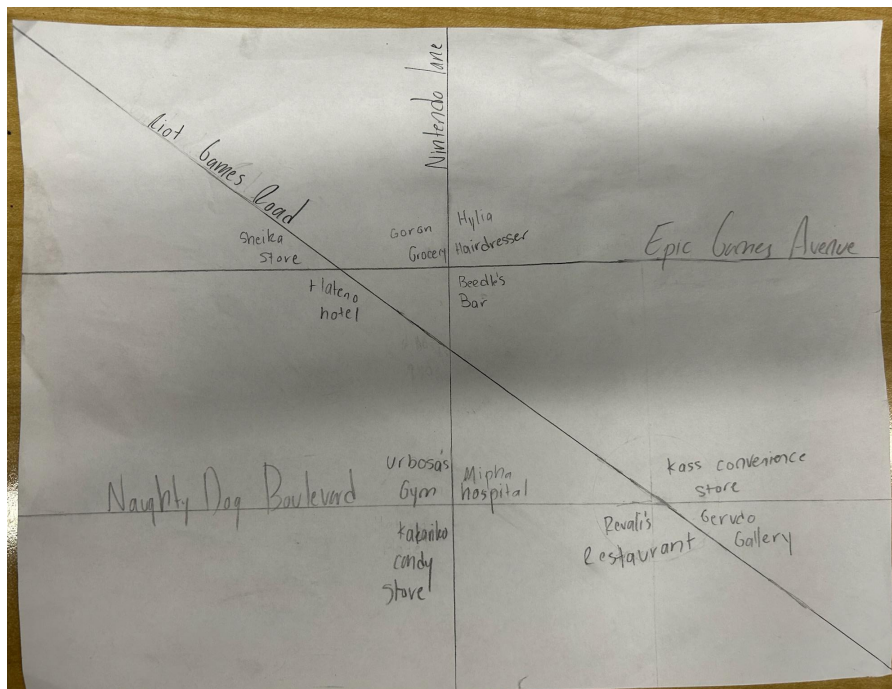
First, we'll look at the Zelda district.

Zelda

Designer: Lucia Meade

Welcome to the Zelda District! It was founded on March 3, 2017 by Link Hylia and has since been the home of one of Video Game Landia's most popular shopping areas as well as Mipha Hospital and the world famous Kakariko Candy Shop. Visitors can enjoy a wide variety of food and entertainment- from Goron Grocery to Revali's Restaurant, notable for its baked apple dessert. Many enjoy meeting at the neighborhood Beetle's Bar after a day at work, and we highly recommend the tater tots.

Map and Instructions of Quadrant:



List of Places:

Mipha Hospital

Sheika Store

Goron grocery

Gerudo gallery

Revali's restaurant

Urbosa's gym

Beedle's Bar

Hylia Hairdresser

Kass Convenience Store

Kakariko candy store

Hateno Hotel

Instructions:

Epic Games Ave. and Naughty Dog Blvd. are parallel to each other and run east to west.

Nintendo Ln. runs north to south and is perpendicular to both Naughty Dog Blvd and Epic Games Ave.

Riot Games Blvd. runs diagonally Northwest to Southeast and intersects all three other roads, forming a small right triangle in the middle of the quadrant with Epic Games Ave. and Nintendo Ln.

If Riot Games Blvd. is the diagonal part of a transversal with Epic Games Ave. and Naughty Dog Blvd., Sheika Store is at an acute angle formed by Riot Games Blvd. and Epic Games Ave. and is an opposite alternate exterior angle with Gerudo Gallery.

Formed by Riot Games Blvd. intersecting Naughty Dog Blvd., there is a pair of vertical obtuse angles in the bottom right corner of this section of the town map. The angle closer to Epic Games Ave. (The north one) is Kass Convenience Store.

In the center-south area of the map, there is a perpendicular intersection formed by Nintendo Ln. and Naughty Dog Blvd. The perpendicular intersection forms four right angles, three of which have important town buildings on them. The Northwest angle is where you'll find Urbosa's gym. At the Southwest corner you'll find Kakariko Candy Store. Mipha Hospital is located at the Northeast angle.

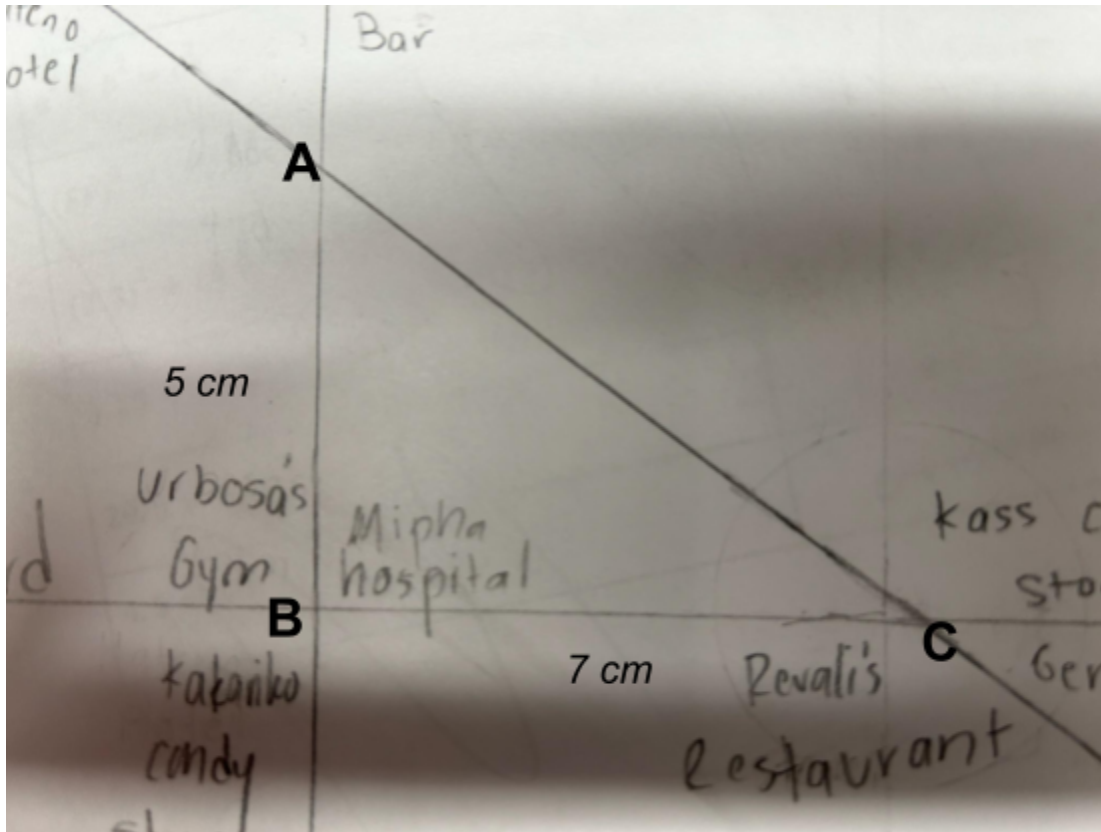
Hateno Hotel forms a linear pair with Sheika Store and the angle it is located at forms corresponding angles with Revali's Restaurant, and makes consecutive and alternate interior angles with Kass Convenience Store.

At the center-north area of this section of the map, there is another perpendicular intersection created by the intersecting roads Epic Games Ave. and Nintendo Ln. At the Northeast corner is Hylia Hairdresser.

Hylia Hairdresser forms supplementary adjacent angles with Beedle's bar, which is located at the southeast corner of the intersection.

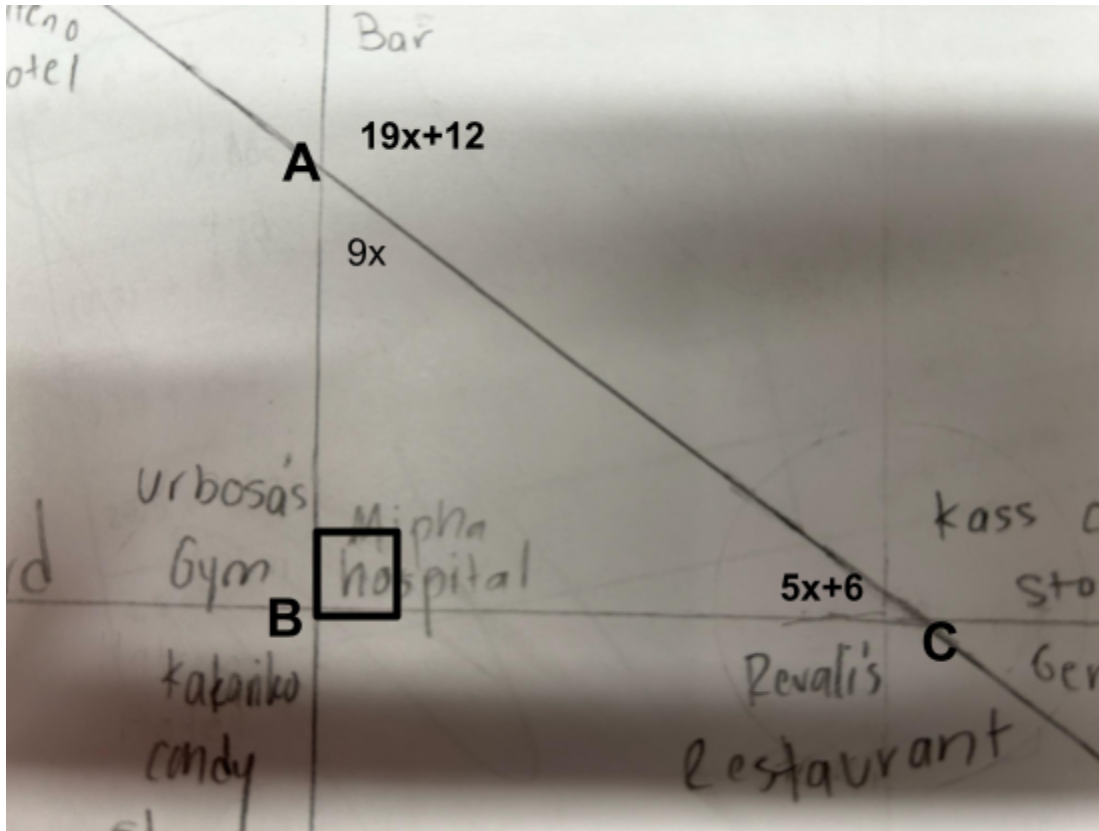
Beedle's bar forms vertical angles with Goron Grocery.

T-chart proof problem:



$AB=2, BC= 2.8$	Given
$a^2 + b^2 = c^2$	Pythagorean Theorem
$(AB)^2 + (BC)^2 = (CA)^2$	Substitution
$(5)^2 + (7)^2 = (CA)^2$	Substitution
$25 + 49 = (CA)^2$	Simplify
$74 = (CA)^2$	Combine like terms
$8.6 = CA$	Simplify square root

Triangle and Triangle Theorems:



Show all work including relevant diagrams and calculations. Make sure to discuss your process and your answer in the context of your town map.

$$90 + (5x + 6) + 9x = 180$$

$$-90$$

$$(5x + 6) + 9x = 90$$

$$-6 \quad -6$$

$$14x = 84$$

$$x = 4$$

So, $\angle ABC = 90$, $\angle BCA = 36$ and $\angle CAB = 54$.

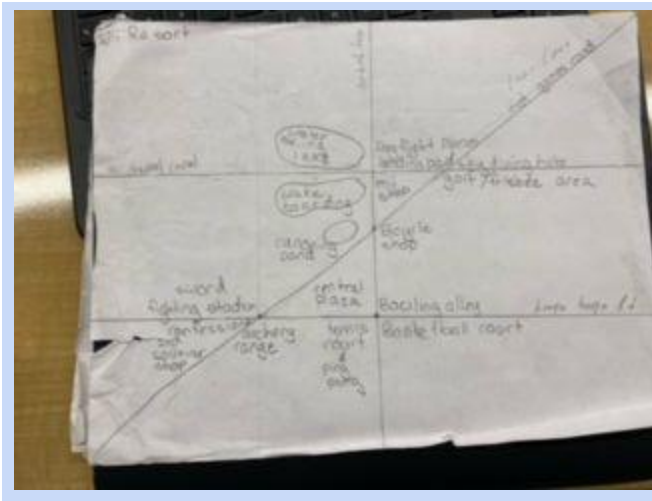
This means that this quadrant of Video Game Landia has a right triangle, angles measuring 90 degrees, 36 degrees and 54 degrees which is home to Mipha Hospital.

Next, we'll travel to the Wii Sports Resorts district.

Designer: [Hannah Weldon]

Welcome to Wii Sport Resorts, here we have plenty of fun activities to do. We have bowling, ping pong, tennis, basketball, and if you're feeling adventurous, we have a sword fighting stadium and dog fight planes. When the day is done, you can chill in the plaza or enjoy a time by the pond.

Map and Instructions of Quadrant:



Buildings and places:

- Water Skiing Lake
- Wakeboarding Lake
- Canoeing Pond
- Central Plaza
- Sword Fighting Stadium
- Confessions and Souvenir Shop
- Archery Range

- Tennis Court and Ping Pong
- Dogfight Plane Landing Pad
- Mii Shop
- Bicycle Shop
- Bowling Alley
- Basketball Court
- Golf and Frisbee Area
- SkyDiving Hub

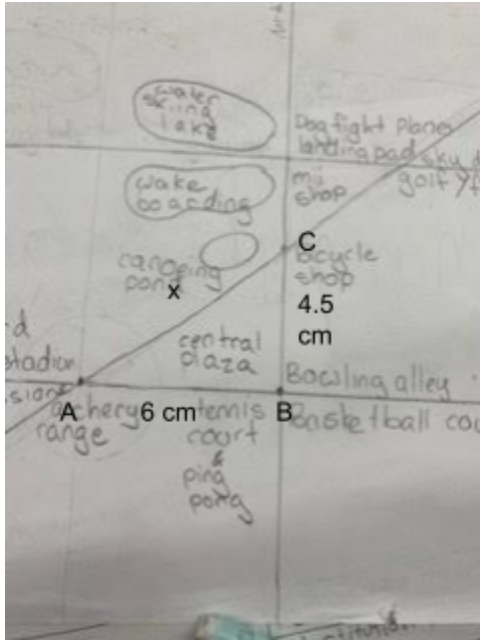
How to navigate:

1. Mii Channel Ave. and Koopa Troopa Ln. are parallel lines.
2. Nintendo Ln. and Mii Channel Ave. are perpendicular lines.
3. Loser Ln. and Koopa Troopa Rd. are Intersecting lines.
4. Mii Channel Ave. and Koopa Troopa Rd. are running from East to West.
5. Mii Channel Ave. is above Koopa Troopa Rd.
6. Nintendo Ln. is running from North to South.
7. Loser Ln. and Nintendo Ln. create a linear pair.
8. Loser Ln. is transversal and cuts through Mii Channel Ave. and Koopa Troopa Rd.
9. Water Skiing Lake is in the Northwest angle of the point where Nintendo Ln. and Mii Channel Ave. intersect.
10. Wakeboarding Lake is in the Southwest angle of the point where Nintendo Ln. and Mii Channel Ave. intersect.
11. Dogfight Planes and Landing Pads are in the Northeast angle of the point where Nintendo Ln. and Mii Channel Ave. intersect.
12. Mii shop is in the Southeast angle of the point where Nintendo Ln. and Mii Channel Ave. intersect.
13. Skydiving Hub is in the Northeast angle of the point where Loser Ln. and Mii Channel Ave. intersect.
14. Golf and Frisbee Area is in the Southeast angle of the point where Loser Ln. and Mii Channel Ave. intersect.
15. Canoeing Pond is in the Northwest angle of the point where Nintendo Ln. and Loser Ln. intersect.
16. Bicycle Shop and the canoeing pond are vertical angles.

17. The bowling alley is at the northeast angle of the point where Koopa Troopa Rd. and Nintendo Ln. intersect.
18. The tennis/ping pong court and the bowling alley are vertical angles.
19. On the line of Nintendo Ln., the waterskiing lake and the central plaza are corresponding angles.
20. The mii shop is located in the smaller right triangle, formed by Loser Ln., Mii Channel Ave. and Nintendo Ln.
21. The central Plaza is the bigger right triangle formed by Loser Ln., Nintendo Ln. and Koopa Troopa Rd.
22. The golf/frisbee area and the dog fight planes are obtuse vertical angles.
23. The central plaza and the confession stand are acute vertical angles.
24. The wakeboarding lake and the canoeing pond are consecutive angles.
25. The dog fighting planes and the central plaza are alternate exterior angles.
26. The central plaza and the archery range are alternate interior angles.
27. The sword fighting stadium and the confession stand are adjacent angles.

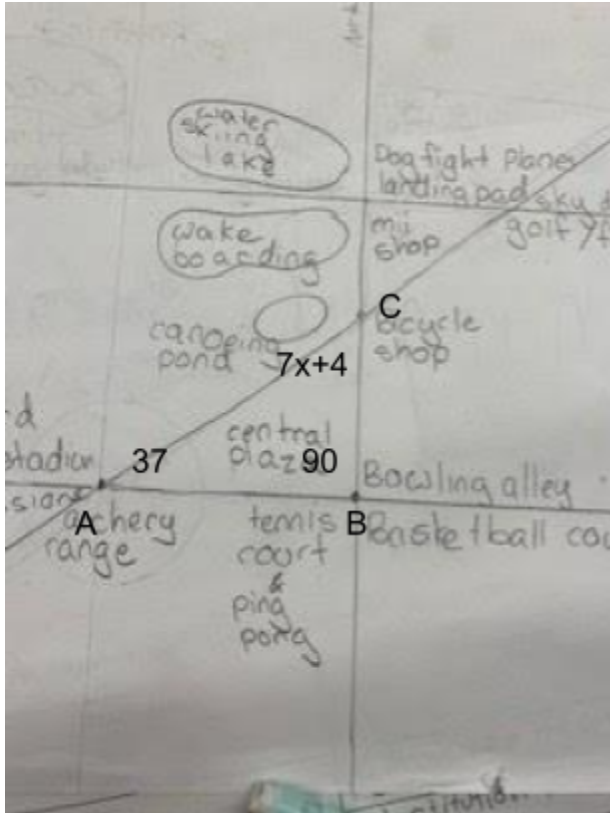
Triangle and Triangle Theorems:

This is Triangle ABC. The party committee wants to put up a banner that sketches from A to C. The side measurements are $AB = 6$ cm, $BC = 4.5$ cm, and $AC = x$. How long does the banner have to be?



Statements	Explanations
$AB = 6 \text{ cm}, BC = 4.5 \text{ cm}, AC = x$	Given
$AB^2 + CB^2 = AC^2$	Pythagorean Theorem
$(AB)^2 + (CB)^2 = AC^2$	Substitution Property
$(6)^2 + (4.5)^2 = x^2$	Substitution Property
$36 + 20.25 = x^2$	Simplify
$56.25 = x^2$	Combine Like Terms
$7.5 = x$	Square Root

For this problem, you put the two side measurements that are given and you put them to the power of 2, then, you simplify and add them together. Once you have that number you square root it and get the missing hypotenuse.



An architect wants to put benches in all of the angles of Central Plaza. Find Angle C.

This is triangle ABC

Angle A is 37 degrees

Angle B is 90 degrees

Angle C is $7x+4$ degrees

Answer:

$x=7$

Angle C = 53

Next, we'll look at the Valorant district.

Valorant

Designer: Steven

Map and Instructions of Quadrant:

1. 11th Broad Valoroad

2. Sage's Surgical Hospital

3. Sova's Archery

4. Viper's Toxin Pets

5. Cypher's College

6. Chamber's High school

7. Phoenix's Roastin Turkey

8. Breach's Buy'n'Dip-out

9. Omen's Oddly Hotel

One road that goes north and south in the middle, 2 parallel roads going east and west in the middle, and a diagonal line that cuts through all the lines going west-south and north-east

line a = line that goes south and north in the middle

line b = the north part of the line from the parallel lines

line c the south part of the line from the parallel lines

line d = the line the cuts through every line

Sage's surgical hospital is on the right side of the perpendicular lines of line a and c

Sova's Archery is on the left of the perpendicular lines of lines a and b

Viper's Toxin Pets is in the left side when line a, c, and d creates a triangle

Cypher's College is on the left side of the lines a and d/linear pair of Phoenix's Roastin Turkey

Chamber's High school is vertical angles with Sage's Surgical Hospital

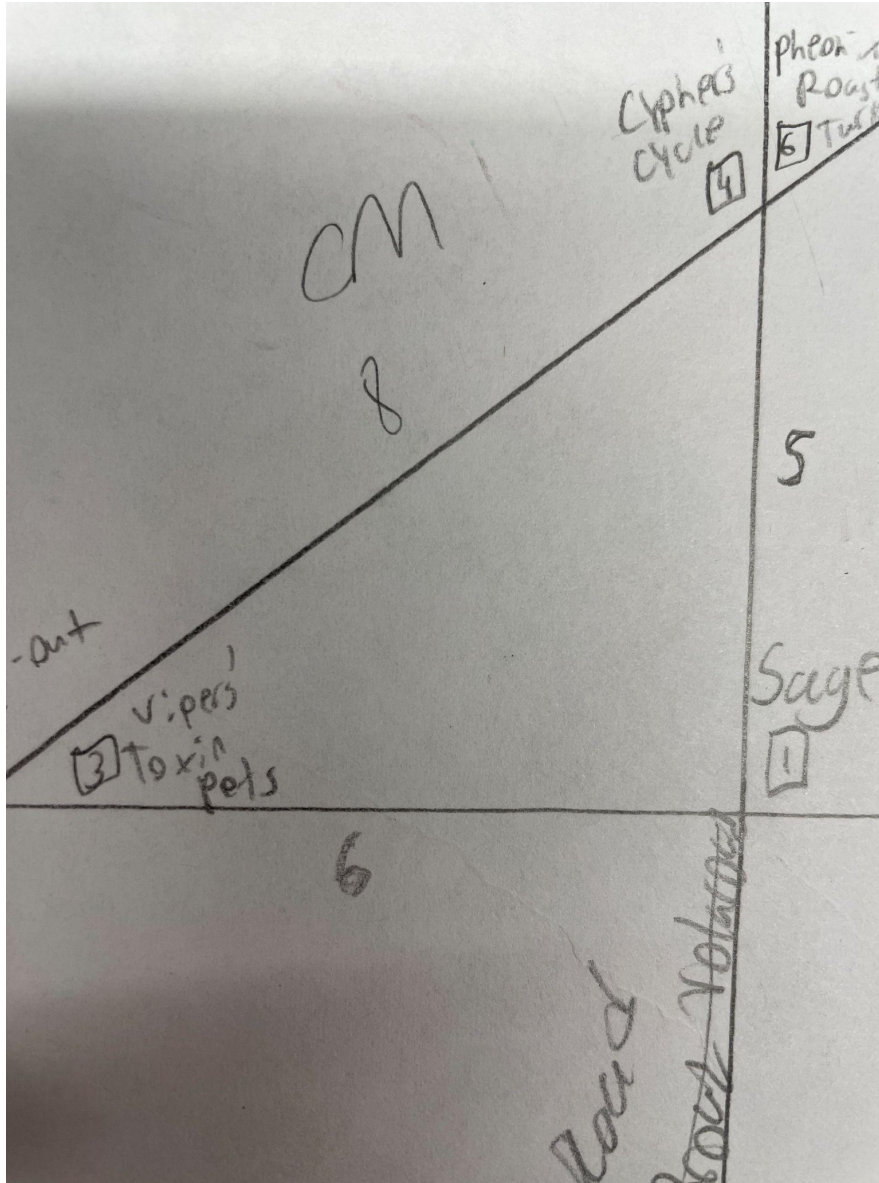
Phoenix's Roastin Turkey is linear pair with Cypher's College

Breach's Buy'n'Dip out is linear pair with Viper's Toxin pets

Omen's Oddly Hotel is on the south obtuse side where the lines d and b meet

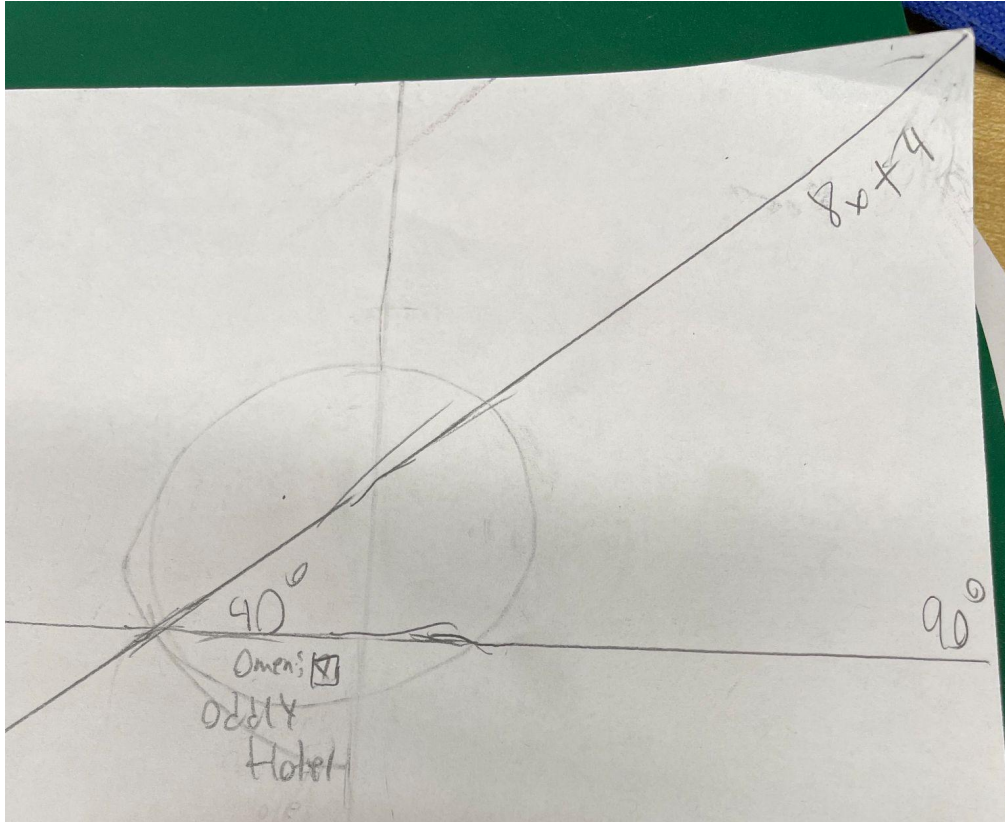
Triangle and Triangle Theorems:

Show all work including relevant diagrams and calculations. Make sure to discuss your process and your answer in the context of your town map.



Statement	Explanation
$a=6, b=5$	Given
$a^2+b^2=c^2$	Pythagorean theorem
$6^2+5^2=c^2$	Input of equality
$36+25=c^2$	Multiplication of the power of 2
$61=c^2$	Addition
$8=c^2$	Square root of division

Show all work including relevant diagrams and calculations. Make sure to discuss your process and your answer in the context of your town map.



When given the angles 90 and 40, what is the other angle when $8x+4$

And lastly, we will take a peek into the Super Mario Bros district.

Super Mario Bros

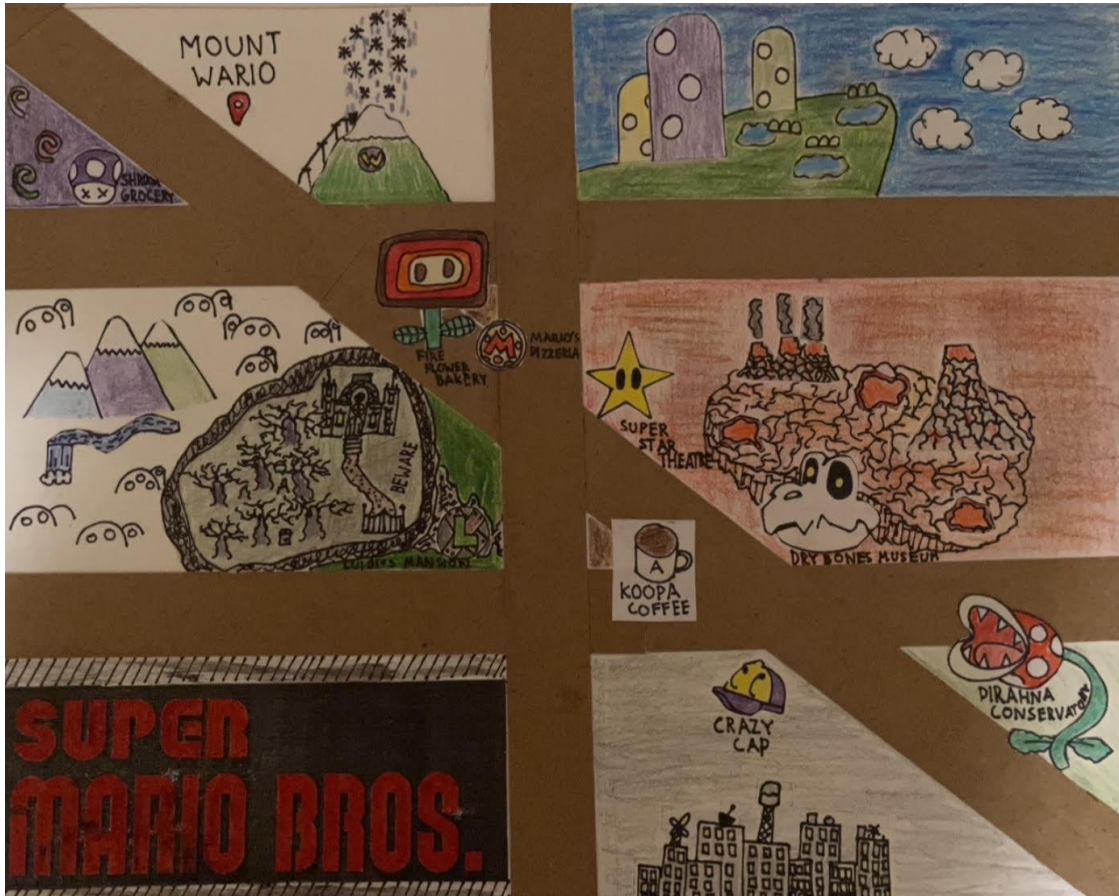
Designer: Owen

Super Mario Bros is a great place to spend time in a cartoony world. During your stay, visit the Fire Flower Bakery. Just watch out for any incoming FIREBALLS! And sip on a steaming cup of roasted coffee from A Koopa Coffee to go with your warm and airy baguette. There are many activities in Super Mario Bros. You can visit the Pirahna Conservatory packed with each and every color of Pirahna plants, just DON'T get too close. Alternatively, you can visit the Dry Bones Museum, however it is rumored the Dry Bones come to life during the middle hours of the night. The movie, "Night at the Museum" was inspired by the Dry Bones Museum and premieres at 5 o'clock this Saturday at the SuperStar Theatre. During any season you can go skiing, snowboarding, sledding or karting down Mount Wario. Mount Wario is the tallest mountain in Super Mario Bros and the coldest one too. If you don't have a winter coat be sure to pick one up at Crazy Cap stocked with every outfit fitted for any task. Feeling under the weather? Visit Shroom Grocery where Toad will make you a boiling mushroom stew filled with the mushrooms scavenged from the depths of the Mushroom Kingdom. Lastly whether you are coming or going make sure to stop at the renowned Marios Pizzeria, famous for an overload of stringy motzerela cheese and a thin but crisp crust.

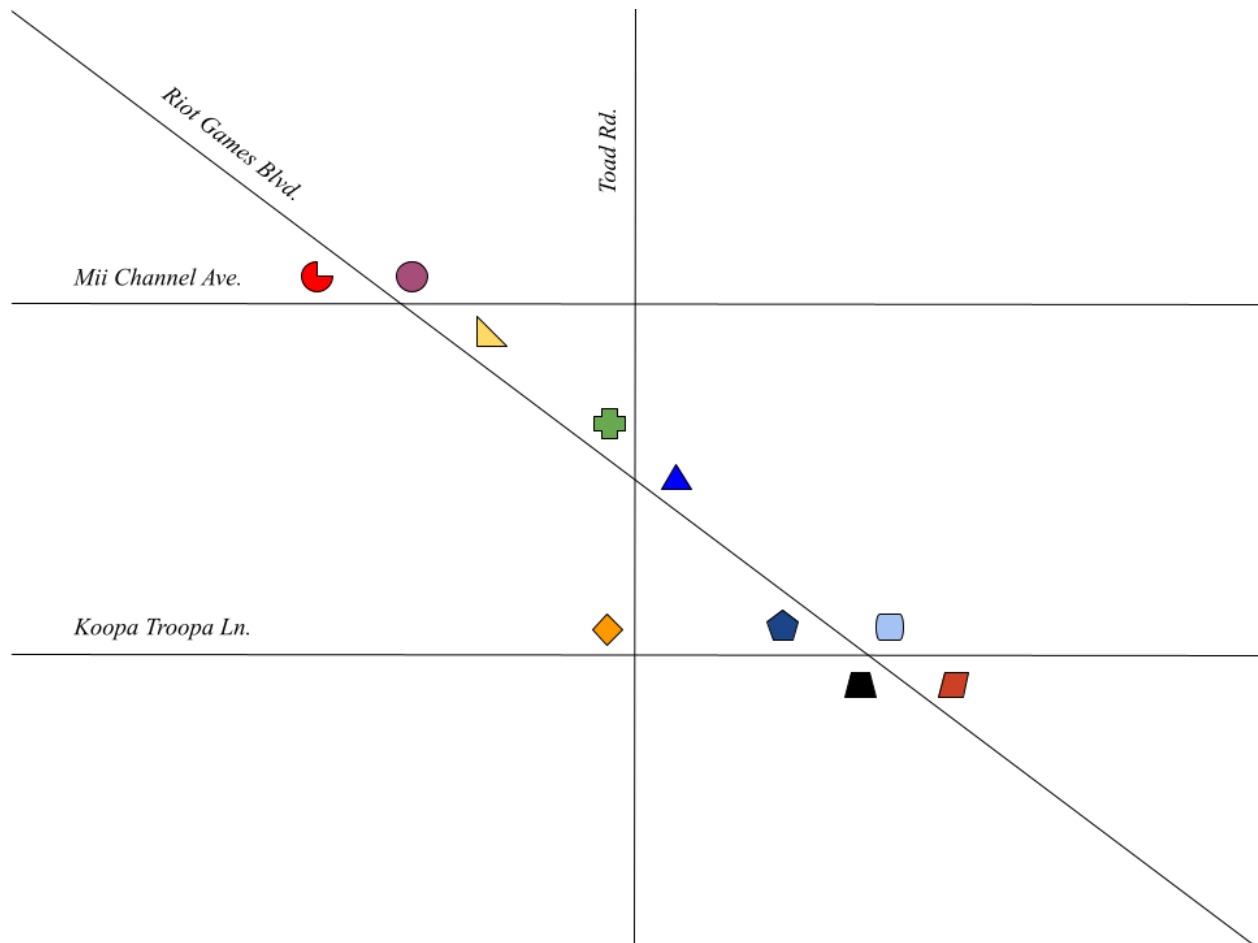
Buildings and Places:

- Fire Flower Bakery
- A Koopa Coffee
- Pirahna Conservatory
- Dry Bones Museum
- SuperStar Theatre
- Mount Wario
- Crazy Cap
- Shroom Grocery
- Mario's Pizzeria
- Luigi's Mansion

Map of Quadrant:






















Map and Instructions of Quadrant:

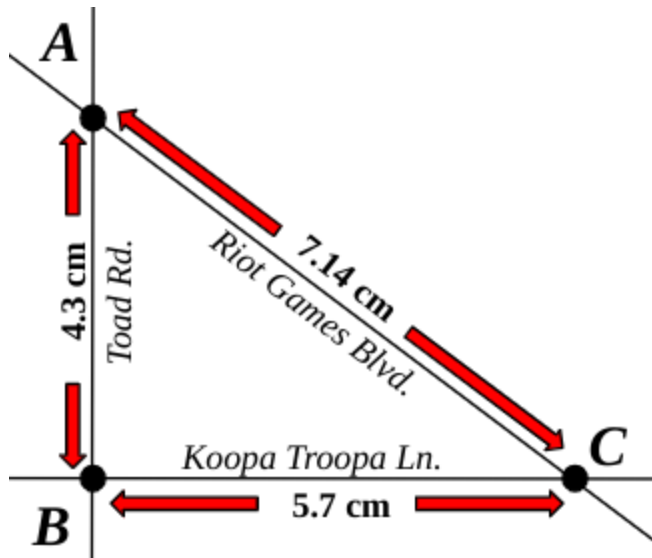


All is **true only** if *Riot Games Blvd.* is the transversal:

1. Two roads are stretching west to east **parallel** to each other. The road closer to the north is named *Mii Channel Ave.* and the road closer to the south is named *Koopa Troopa Ln.*
2. The road that is **perpendicular** to the *Mii Channel Ave.* and *Koopa Troopa Ln.*, dividing the quadrant into two semi-equal halves is named *Toad Rd.*
3. The **transversal** is named *Riot Games Blvd.* spans from the southeast to the northwest corners of the quadrant and **intersects** through the *Mii Channel Ave.*, *Koopa Troopa Ln.* and *Toad Rd.*

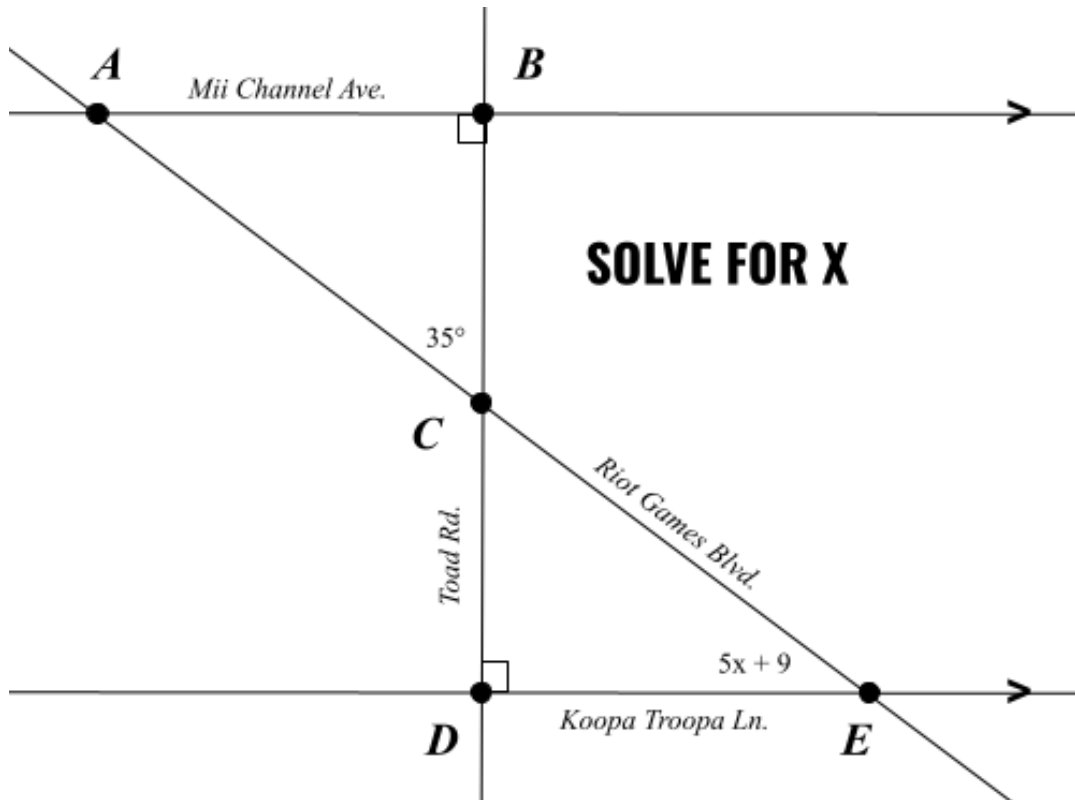
4. *Fire Flower Bakery*  is plotted on the northwest corner of the right triangle formed by *Toad Rd.*, *Mii Channel Ave.*, and *Riot Games Blvd.*
5. *A Koopa Coffee*  is **alternate interior** to *Fire Flower Bakery* .
6. *Piranha Conservatory*  is a **vertical angle pair** with *A Koopa Coffee* .
7. *Dry Bones Museum*  is a **linear pair** with *Piranha Conservatory*  to the east of the transversal.
8. *Mount Wario*  is **corresponding** to *Dry Bones Museum* .
9. *Crazy Cap*  is **alternate exterior** to *Mount Wario* .
10. *Shroom Grocery*  is **consecutive** to *Crazy Cap* .
11. *Mario's Pizzeria*  is plotted on the **acute angle** south of the right triangle formed by *Toad Rd.*, *Mii Channel Ave.*, and *Riot Games Rd.*
12. *SuperStar Theatre*  is a linear pair with *Mario's Pizzeria*  and is plotted on the **obtuse angle** southeast of *Mario's Pizzeria* .
13. *Luigi's Mansion*  is **adjacent** to *A Koopa Coffee*  and is plotted on the **right angle** of the right triangle formed by *Toad Rd.*, *Koopa Troopa Ln.*, and *Riot Games Blvd.*

Pythagorean Theorem Problem:



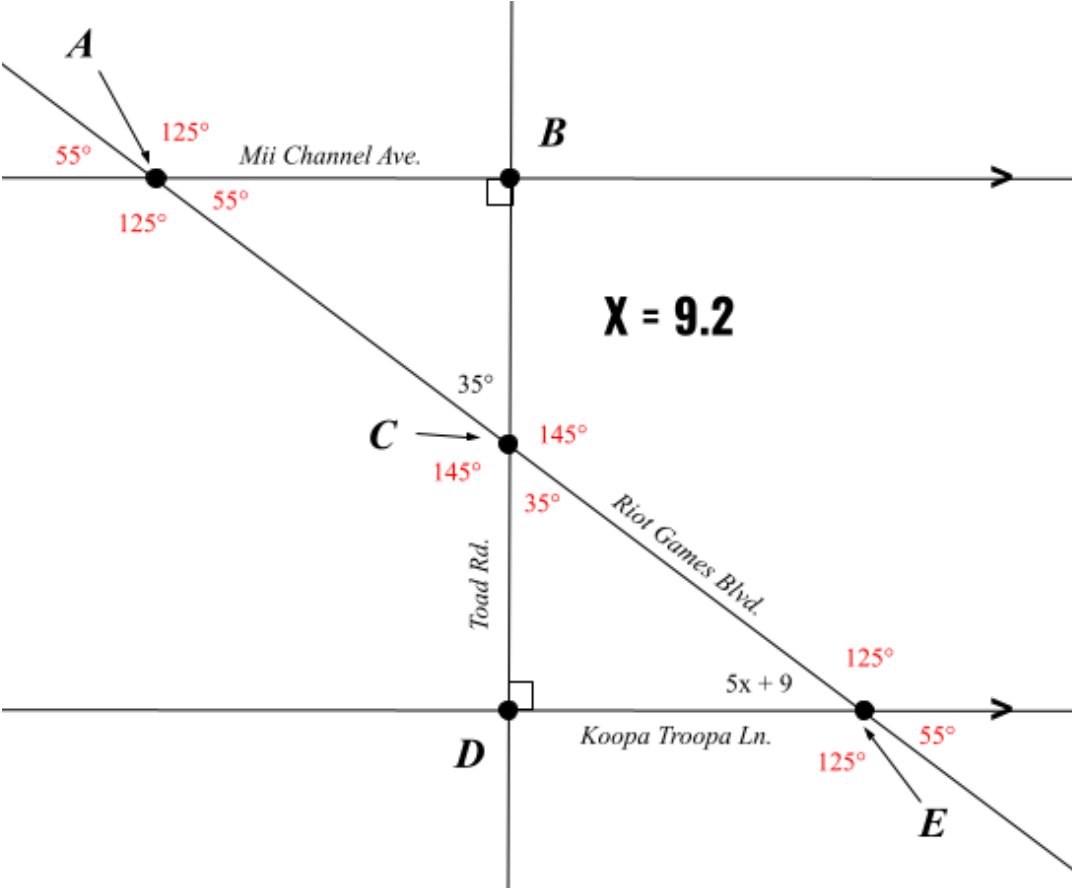
Statements	Explanations
$AB = 4.3 \text{ cm}, BC = 5.7 \text{ cm}$	Given
$a^2 + b^2 = c^2$	Pythagorean Theorem
$(AB)^2 + (BC)^2 = (AC)^2$	Substitution
$(4.3)^2 + (5.7)^2 = (AC)^2$	Substitution
$18.49 + 32.49 = (AC)^2$	Simplify
$50.98 = (AC)^2$	Combine Like Terms
$7.14 = AC$	Square Root

Triangle Angle Sum/Exterior Angle Problem:



Statements	Explanations
$m\angle BCA = 35^\circ$ $m\angle DAC = 5x + 9$ $m\angle ABC = 90^\circ$ $m\angle CDE = 90^\circ$ <i>Mii Channel Ave.</i> is parallel to <i>Koopa Troopa Ln.</i>	Given
$m\angle BCA = m\angle DCE$	Vertical Angle Theorem
$35^\circ = m\angle DCE$	Substitution
$m\angle DCE + m\angle CDE + m\angle DEC = 180^\circ$	Triangle Sum Theorem
$35^\circ + 90^\circ + 5x + 9 = 180^\circ$	Substitution
$134^\circ + 5x = 180^\circ$	Combine Like Terms
$5x = 46^\circ$	Subtraction Property of Equality
$x = 9.2^\circ$	Simplify

Triangle Angle Sum/Exterior Angle Answer:



Conclusion:

During this benchmark, we learned to manage and maximize the limited time available in and outside of school. We learned how to communicate with one another despite the absence of group members. This communication within our group laid the foundation for us to persist and to collaborate with one another in order for us to complete the benchmark before the deadline.

From the beginning our group was unified in our ideas. We were coherent and able to decide quickly on our topic and plan. Overall, we stayed on schedule, especially considering multiple group members were out. Oftentimes we worked on the benchmark outside of school, communicating over texts. Despite the setbacks, we managed to communicate with each other and create something we're proud of.