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A VISITOR'S GUIDE TO

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*Christmasville*

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MATIAS, PAULINA,  
JONATHAN, IONE

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# Destination: Christmasville

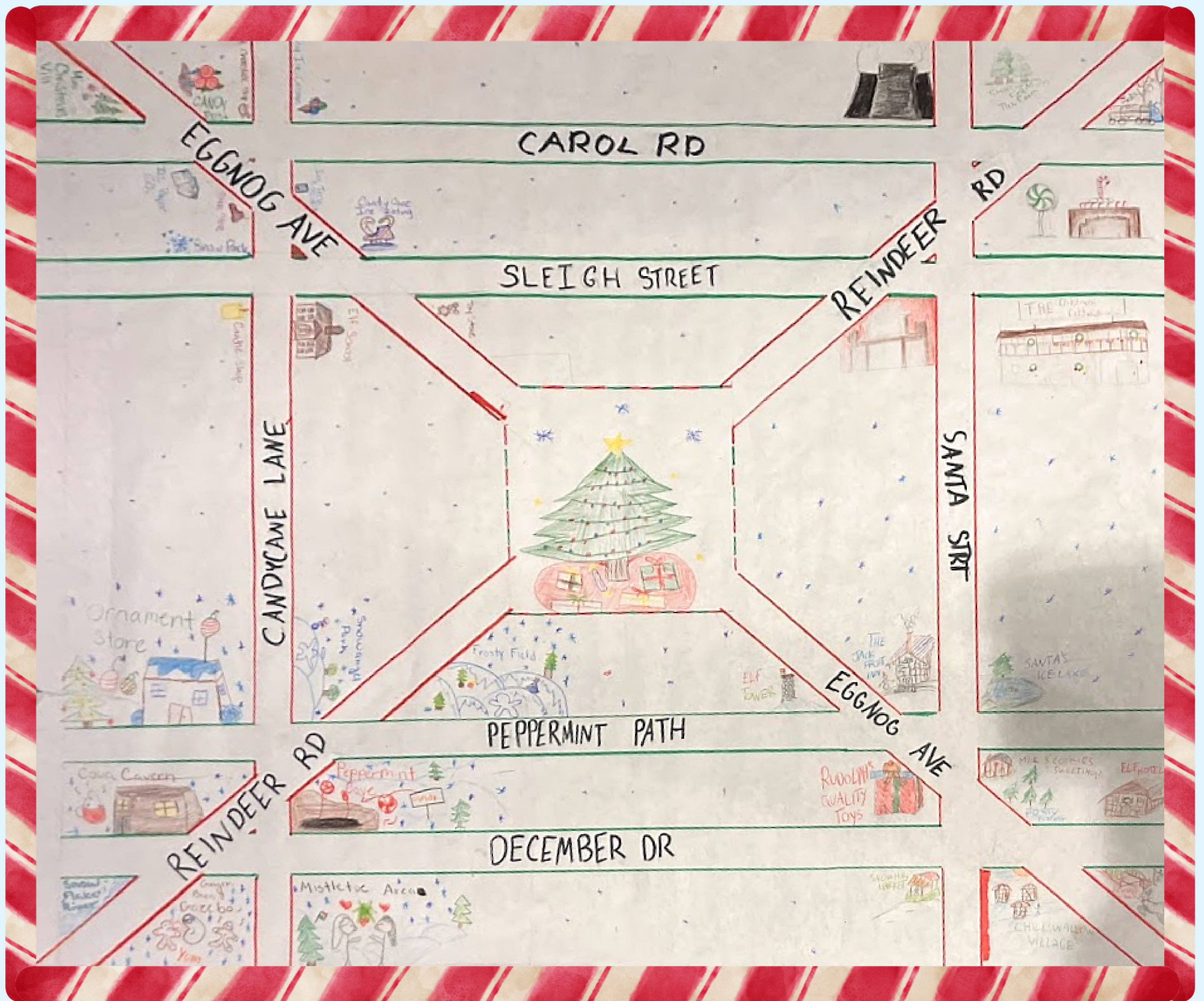
## MEMBERS OF THE CHRISTMASVILLE TOWN COMMITTEE:

Jonathan Trejo  
Matias Barreto  
Ione Saunders  
Paulina Martinez

Welcome, welcome all, to the magical place that is Christmasville! This town is the home of Santa Claus himself, along with hundreds of villagers and animals. This town was established hundreds of years ago, and it's still thriving due to Christmas magic. You'll never run out of things to do here because there's everything from hot chocolate shops to reindeer stables. When you're through with all of your winter errands, you can pay a visit to the king of Christmasville himself — Santa Claus! You might also be able to meet his wife and elves. Your eyes will be all aglow, with visions of sugarplums dancing in your head!

*Signed,  
Santa Claus*



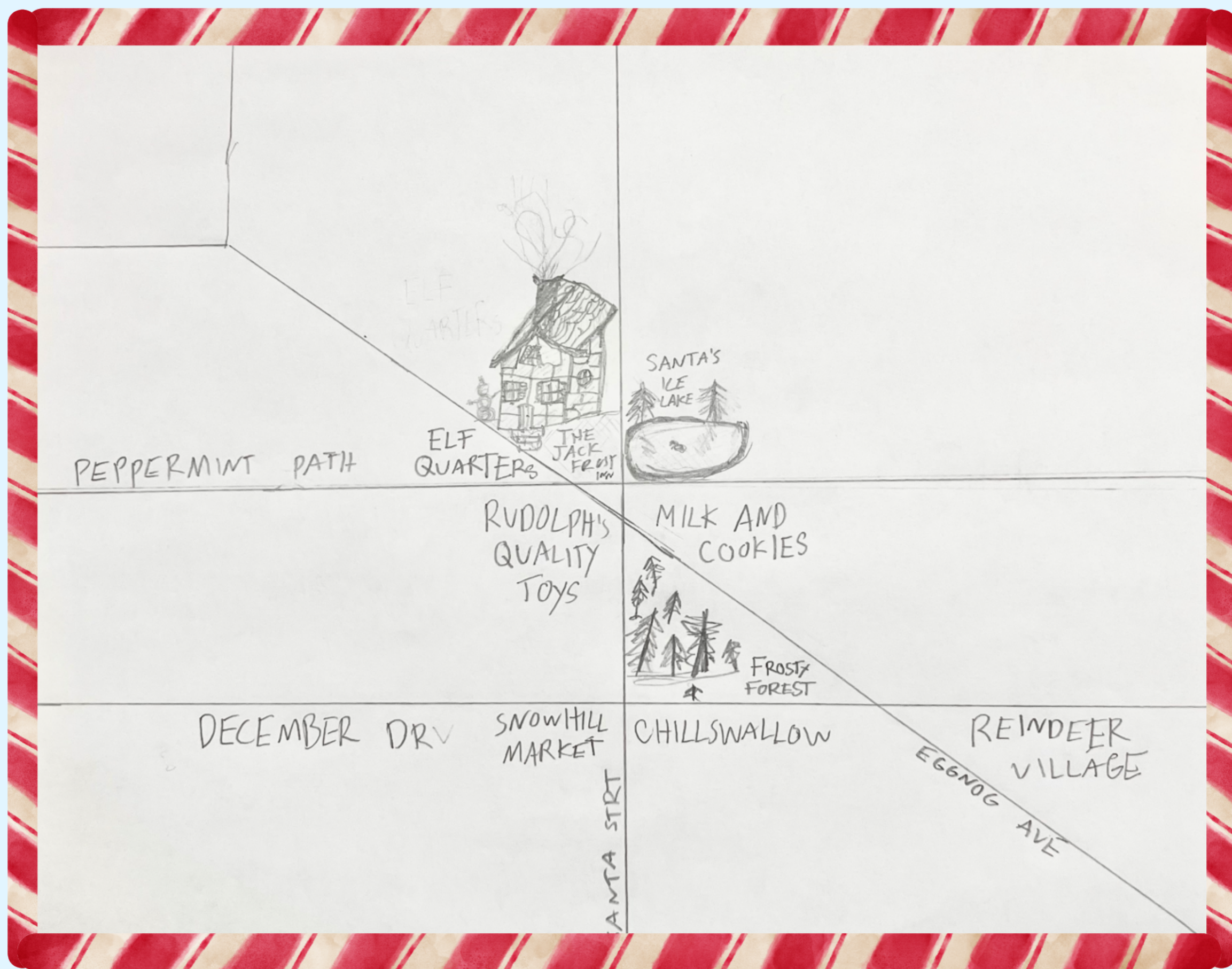


This visitor's guide will tell you all you need to know about how to get an authentic Christmasville experience. Each section will cover one of the four quadrants of the town, each bringing to the table a unique ambiance and charm. Go forth and read, and enjoy your stay in... Christmasville!





# QUADRANT DESIGNER: MATIAS



This is the most quaint side of Christmasville, featuring buildings as old as the town itself (more than 400 years old). In all of its old-fashioned, charming glory, you'll be more than occupied with all of the fun things to do. Craving some gingerbread? Perhaps make a pit stop at Milk & Cookies, owned and operated by Mrs. Claus herself! Looking for a place to escape the cold for the night? The Jack Frost Inn has deluxe accommodations for elves and people alike! Maybe you're in the mood for some adventure — check out the Reindeer Village and take a Cervidae-style flight! And at the end of the day, take a stroll through the Frosty Forest and by Santa's Icelake and marvel at the picturesque Christmas sunset. Be happy you're living in the quaint, cozy side of Christmasville.



# INSTRUCTIONS:

- December Drive and Peppermint Path run from east to west. Peppermint Path is located on the more northern side, while December Drive is closer to the south.
- December Drive and Peppermint Path are parallel lines.
- Eggnog Avenue intersects through December Drive, Peppermint Path, and Santa Street from the southeast. Eggnog Ave is a transversal. This creates a small right triangle at the intersection of Peppermint Path and Santa Street.
- December Drive and Peppermint Path are perpendicular to Santa Street, which comes up from the south. This forms four right angles at the intersections of December Drive and Santa Street and one at Peppermint Path and Santa Street.
- In the southeast corner of the quadrant, Eggnog Avenue intersects with December Drive, forming an acute angle. The Reindeer Village is set up at this acute intersection.
- On December Drive, Snowhill Market and Chillswallow Village sit at right angles that also happen to be adjacent.
- The Elf Hotel and the Frosty Forest are alternate interior angles in the middle, separated by Eggnog Avenue, in the east.
- Snowhill Market and Santa's Icelake are alternate exterior angles. Snowhill Market sits at the intersection of December Drive and Santa Street in the south. Santa's Icelake sits at the intersection of Peppermint Path and Santa Street in the north.
- Rudolph's Quality Toys in the middle and The Jack Frost Inn are corresponding angles in the northwest.
- Chillswallow and Santa's Icelake are consecutive exterior angles.
- Mrs. Claus' Milk and Cookies Bakery and The Jack Frost Inn are vertical angles.
- The Jack Frost Inn and the Elf Quarters are a linear pair.



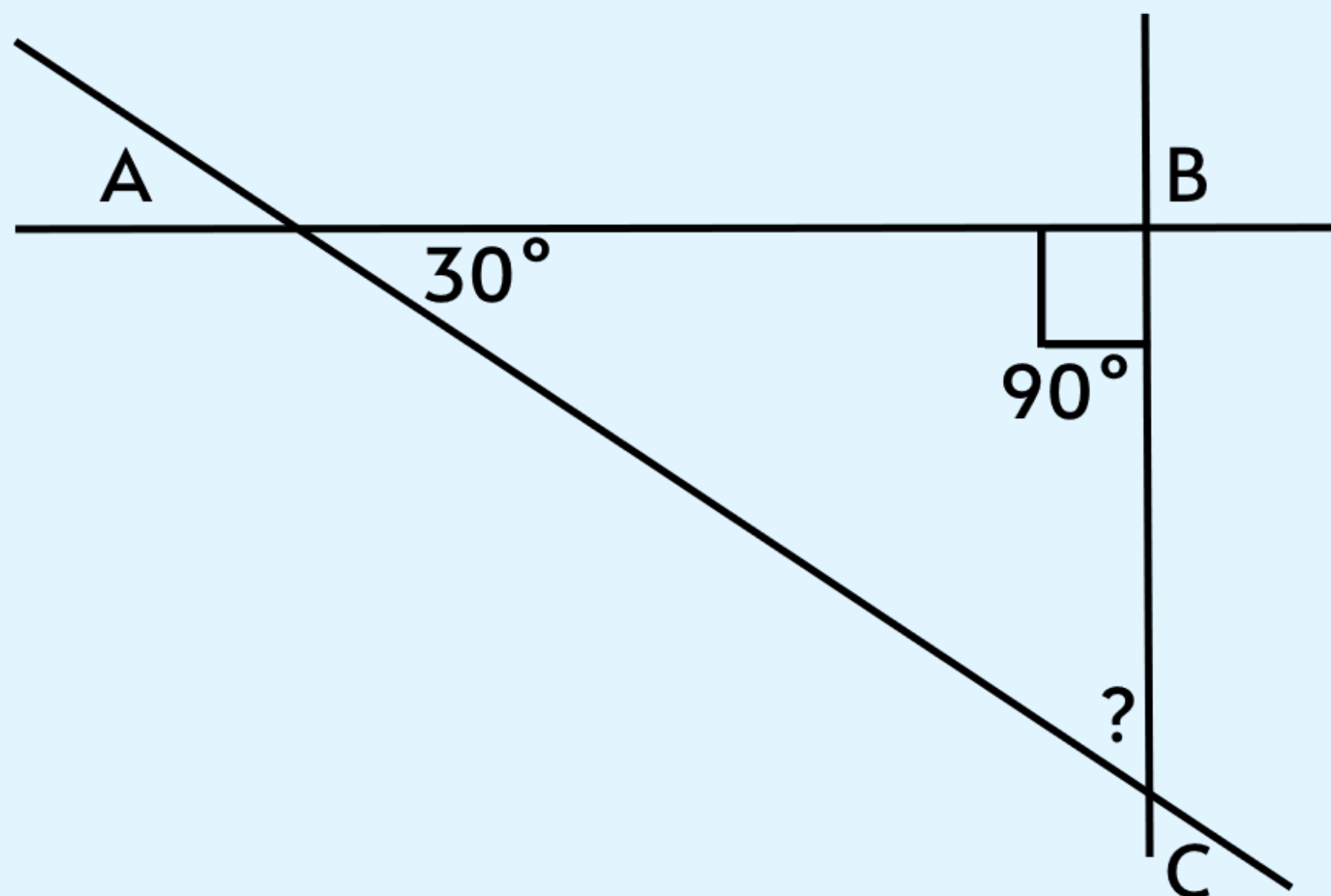
# LOCATIONS:

- The Jack Frost Inn
- Santa's Icelake
- Milk & Cookies Sweetshop
- Reindeer Village
- Chillswallow
- Snowhill Market
- Elf Quarters
- Rudolph's Quality Toys
- Frosty Forest





# PROBLEMS:



Can you solve this? This is my triangle problem, taken directly from my quadrant!

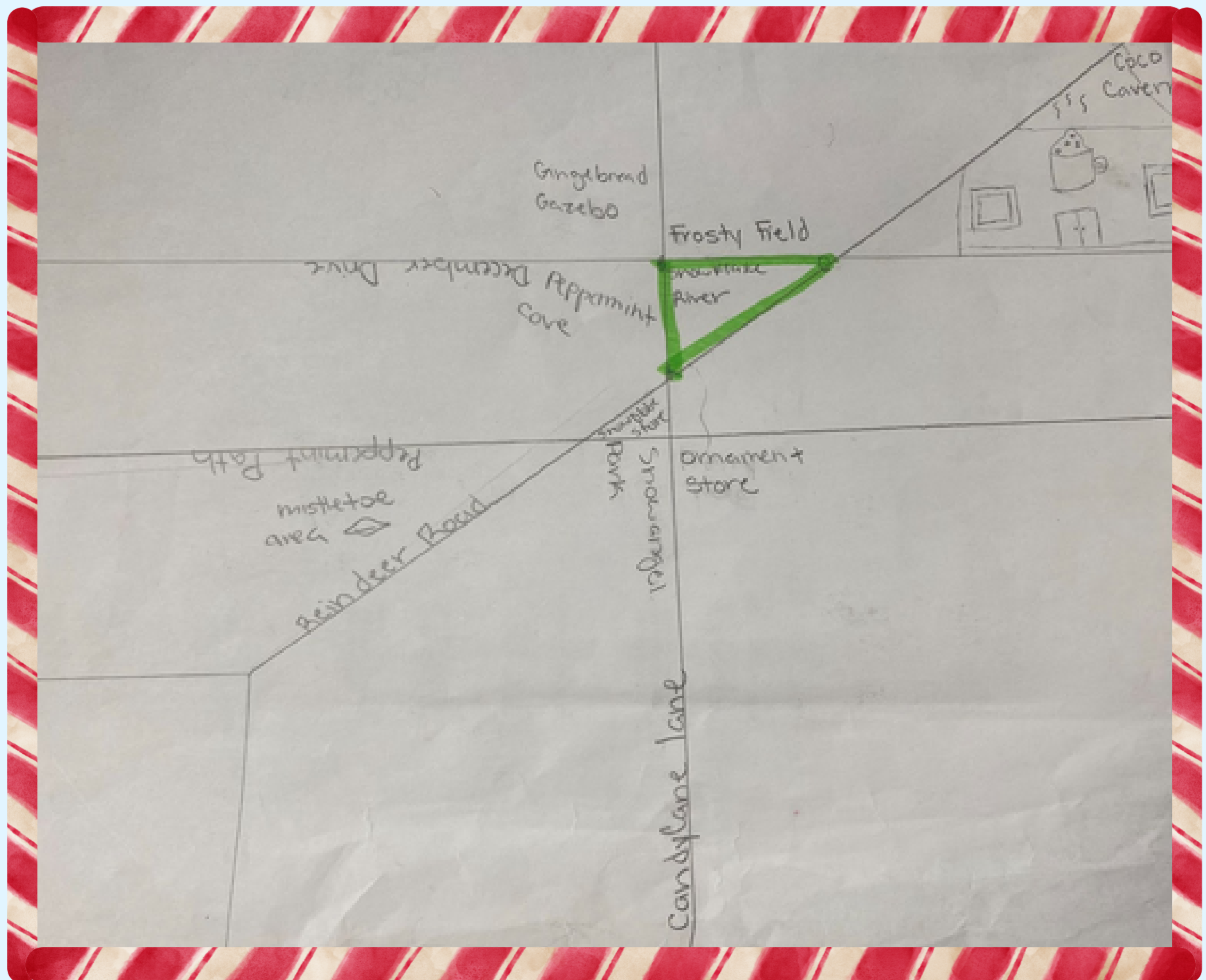
$\angle A = 30^\circ, \angle B = 90^\circ$	Given
$\angle A + \angle B + \angle C = 180^\circ$	Triangle angle sum theorem
$30 + 90 + x = 180^\circ$	Substitution
$30 + 90 = 120$	Addition
$180 - 120 = 60$	Subtraction
$x = 60$	Solution

Now, let's look at my Pythagorean Theorem t-chart!

$4^2 + 5.5 = C^2$	Given
$16 + 30.25 = C^2$	Squaring
$46.25 = C^2$	Addition
$46.25 = 6.8$	Substitution
$6.8 = C^2$	Solution



# QUADRANT DESIGNER: PAULINA



Welcome to the frosty part of Christmasville! We have snowy slopes, frosty fields, and so much more! You can come enjoy a nice hot cocoa at our Coca Cavern. Along with a nice warm gingerbread from our Gingerbread Gazebo! Bring your loved ones to the Mistletoe Area to have a nice warm cozy smooch, along with buying them lots of presents at the ornament store. Take your family to Peppermint Cove to have minty fresh breath and fun.

# INSTRUCTIONS:

- Reindeer Road is located as a transversal that cuts through Peppermint Road, and December Drive.
- Peppermint Path intersects Reindeer Road.
- December Drive is in the north part of the quadrant.
- Peppermint Path runs through the middle of the Quadrant.
- December Drive is parallel to Peppermint Path.
- Reindeer Road runs northeast to southwest.
- Ginger Gazebo is vertical to Snowflake River.
- Frosty Field is corresponding to the Ornament Store.
- Snowflake River is a right triangle.
- Coco Cavern is an acute angle.
- Candy Cane Lane is perpendicular to Peppermint Path.
- Reindeer Road and December drive form an obtuse angle in the northeast quadrant.
- Snow Angel park and the Ornament Store are a linear pair in the southside of peppermint path.
- The Mistletoe area is vertical to Snowglobe Store.
- Frosty Field and Ornament Store are consecutive.
- Gingerbread Gazebo is adjacent on the north side of December Drive.
- Gingerbread Gazebo and the Ornament Store are alternate exterior angles.
- Snowflake River and the Snowglobe Store are alternate interior angles.

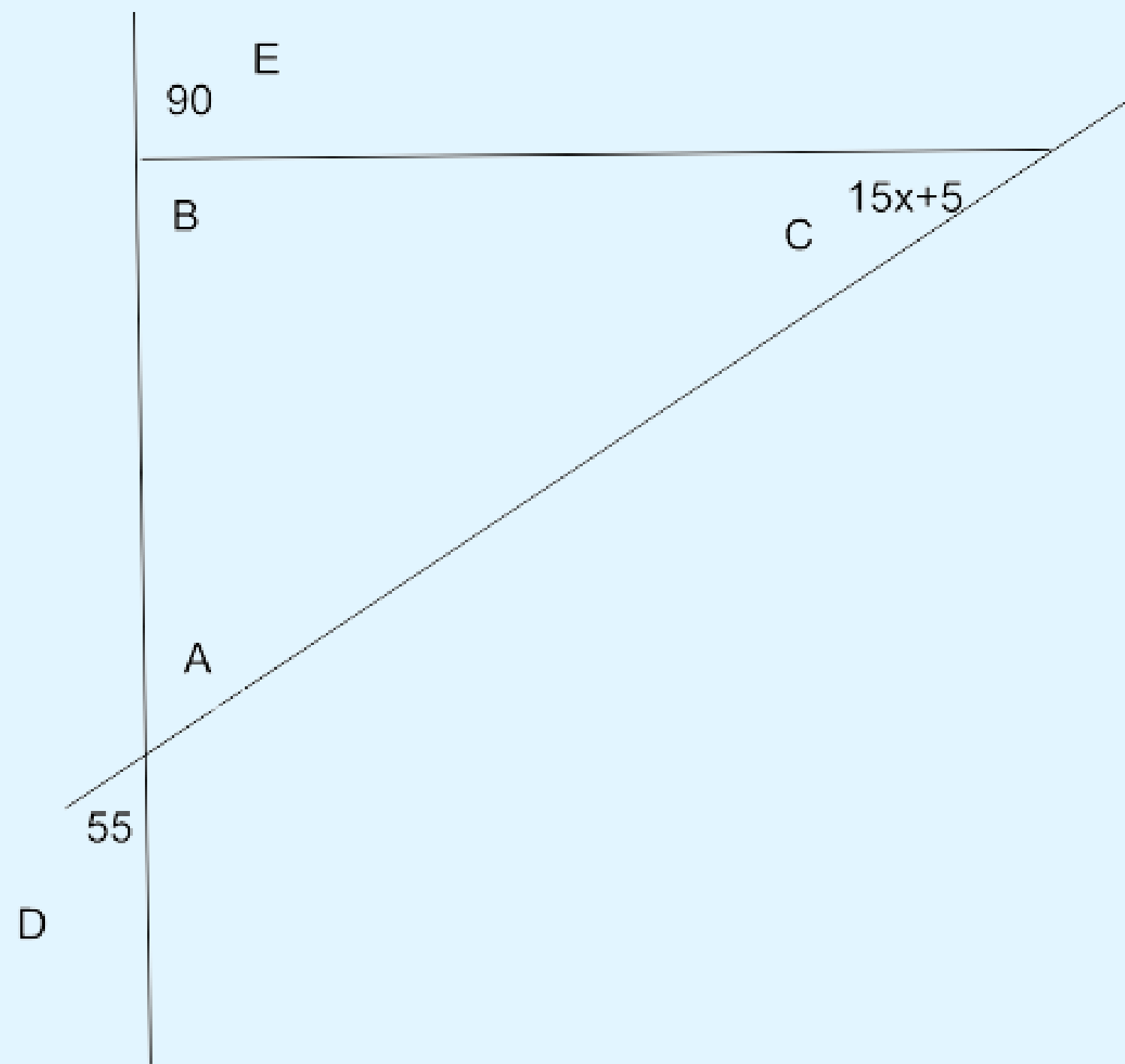


## LOCATIONS:

- Snowy Slope
- Coco Cavern
- Mistletoe Area
- Snow Angel Park
- Ornament Store
- Peppermint Cove
- Ginger bread Gazebo
- Frosty Field
- Snowflake River



# PROBLEMS:



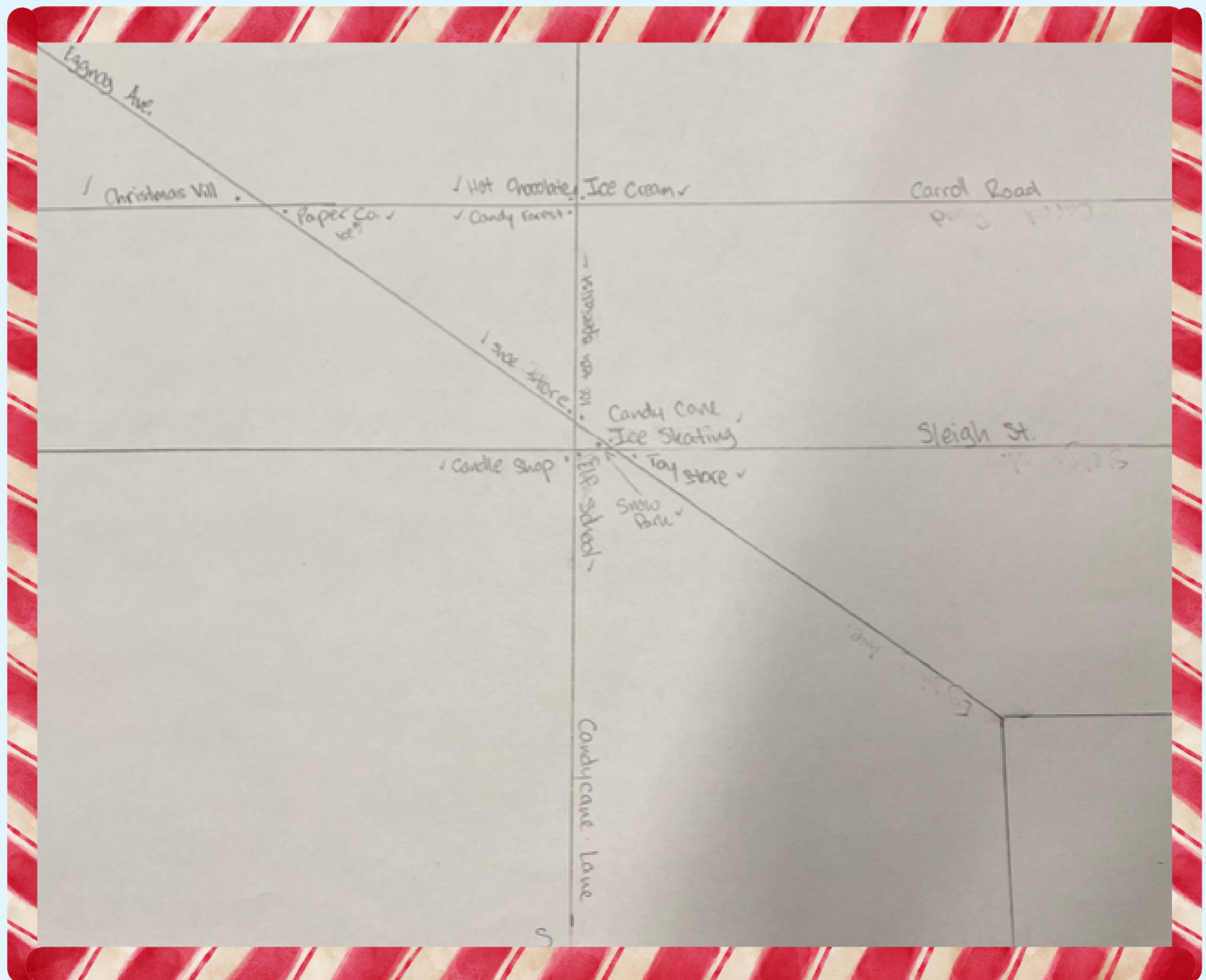
Moving on to the Triangle and Pythagorean Theorems. My quadrant shows both!

$AB = 1$ inch $BC = 1.8$ inches	Given
$a^2 + b^2 = c^2$	Pythagorean theorem
$(AB)^2 + (BC)^2 = (AC)^2$	Substitution
$(1)^2 + (1.8)^2 = (AC)^2$	Substitution
$1 + 3.24 = (AC)^2$	Simplify
$4.24 = (AC)^2$	Combine like Terms
$2.0 = AC$	Square Roots

$\angle D = 55$ $\angle E = 90$ $\angle C = 15x + 5$	Given
$\angle D = \angle A$	Definition of Vertical Angles
$\angle B + \angle E = 180$	Supplementary
$\angle B + 90 = 180$	Substitution
$\angle B = 90$	Subtraction property of equality
$\angle A + \angle B + \angle C = 180$	Triangle Sum Theorem
$\angle 55 + \angle 90 + 15x + 5 = 180$	Substitution
$150 + 15x = 180$	Combine Like Terms
$15x = 30$	Subtraction Property of Equality.
$x = 2$	Division Property of Equality



# QUADRANT DESIGNER: IONE



There are many fun things to do in this small winter wonderland. This quadrant was built on icy terrain. The Hot Chocolate Stop, and Icy Ice Cream huts are perfect for a sweet treat. Tinker Toy Store and Mini Christmas Vill are the best places for some fast fun for the whole family! But be careful as to not get lost in the Candy forest, as creatures of all shapes and sizes lurk behind the large white and red candy canes. The fudgy surface of the forest floor makes it impossible to escape in sticky situations. However, do not fear! As the Shoe Shine Shoe Store has got you covered. Make sure to pay the specialists a visit before stepping foot into fudgy mud. This quadrant will fulfill all of your cold winter needs.

# INSTRUCTIONS:

- Candy Cane Lane runs through this part of Christmasville, north south.
- Carroll Road and Sleigh Street form parallel lines.
- Candy Cane Lane cuts Carroll Road and Sleigh street in half, creating perpendicular lines.
- Eggnog Ave is intersecting with Carroll Road, Sleigh Street, and Candy Cane Lane. It is a transversal for Carroll Road and Sleigh Street.
- Candy Cane Ice Skating rink and the Christmas Toy Store form a linear pair on the northeast side of Eggnog Avenue and Sleigh Street.
- Eggnog Avenue and Carroll Road form an acute angle in the northwest area of the quadrant, where Christmas Vill is located.
- Candy Cane Lane and Sleigh Street form a right angle in the southwest area of the quadrant, where the Candle Shop is located.
- The Candle Shop and Elf school form a linear pair at the south side of Sleigh Street.
- Christmas Vill and Ice Paper Co. are vertical angles.
- Ice Paper Co. and the Toy store are consecutive angles.
- Christmas Vill and the Snow Park are consecutive angles.
- Ice Paper Co. and the Toy Store are alternate interior angles.
- Eggnog Avenue, Carroll Road, and Candy Cane Lane all makeup a right triangle in the northwest area that Ice Paper Co, the Shoe Store, and Candy Forrest are all corners of.
- The Hot Chocolate Stop and the Ice Cream shop are adjacent angles on the north side of Carroll Road.
- The Ice Cream shop and Candy Forest are vertical angles.
- The Hot Chocolate Stop and Elf School are alternate exterior angles, along Candy Cane Lane's transversal.
- Snow Park and the Toy Store are vertical angles.
- The Shoe Store and Ice Tech Specialist is a linear pair.



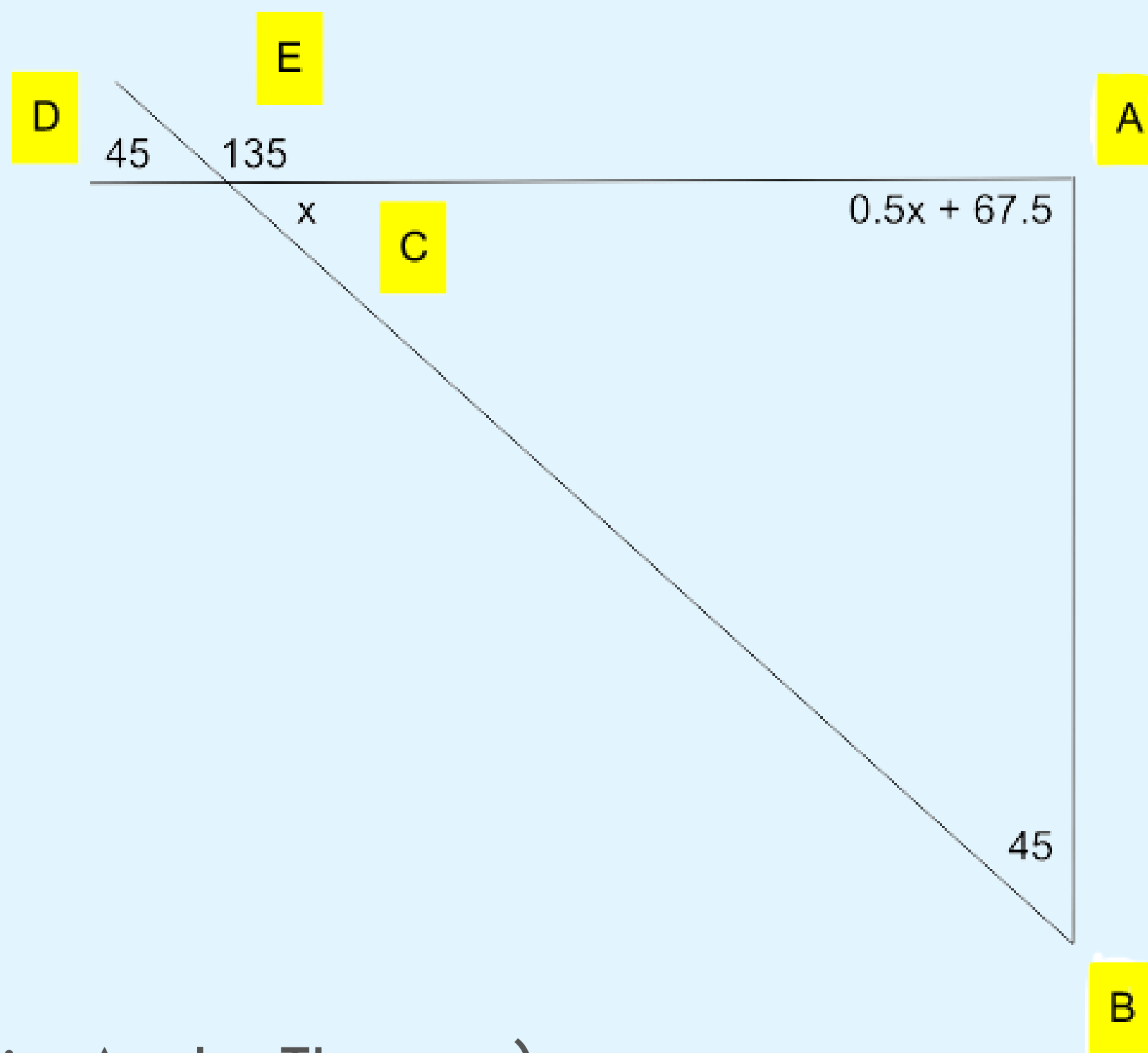
## LOCATIONS:

- Ice Paper Co.
- Candy Forest
- Christmas Vill
- Hot Chocolate Stop
- Icey Ice Cream
- Ice Tech Specialist
- Shoe Shine Shoe Store
- Candy Cane Ice Skating
- Tinker Toy Store
- Snow Park
- Elf School
- Candle Shop



**NORTH POLE**

# PROBLEMS:



First Solution: (Exterior Angles Theorem)

$$0.5x + 67.5 + 45 = 135$$

$$0.5x + 112.5 = 135$$

$$0.5x = 22.5$$

$$x = 45$$

Second Solution: (Triangle Sum Theorem)

$$x + 0.5x + 67.5 + 45 = 180$$

$$1.5x + 67.5 + 45 = 180$$

$$1.5x + 112.5 = 180$$

$$1.5x = 67.5$$

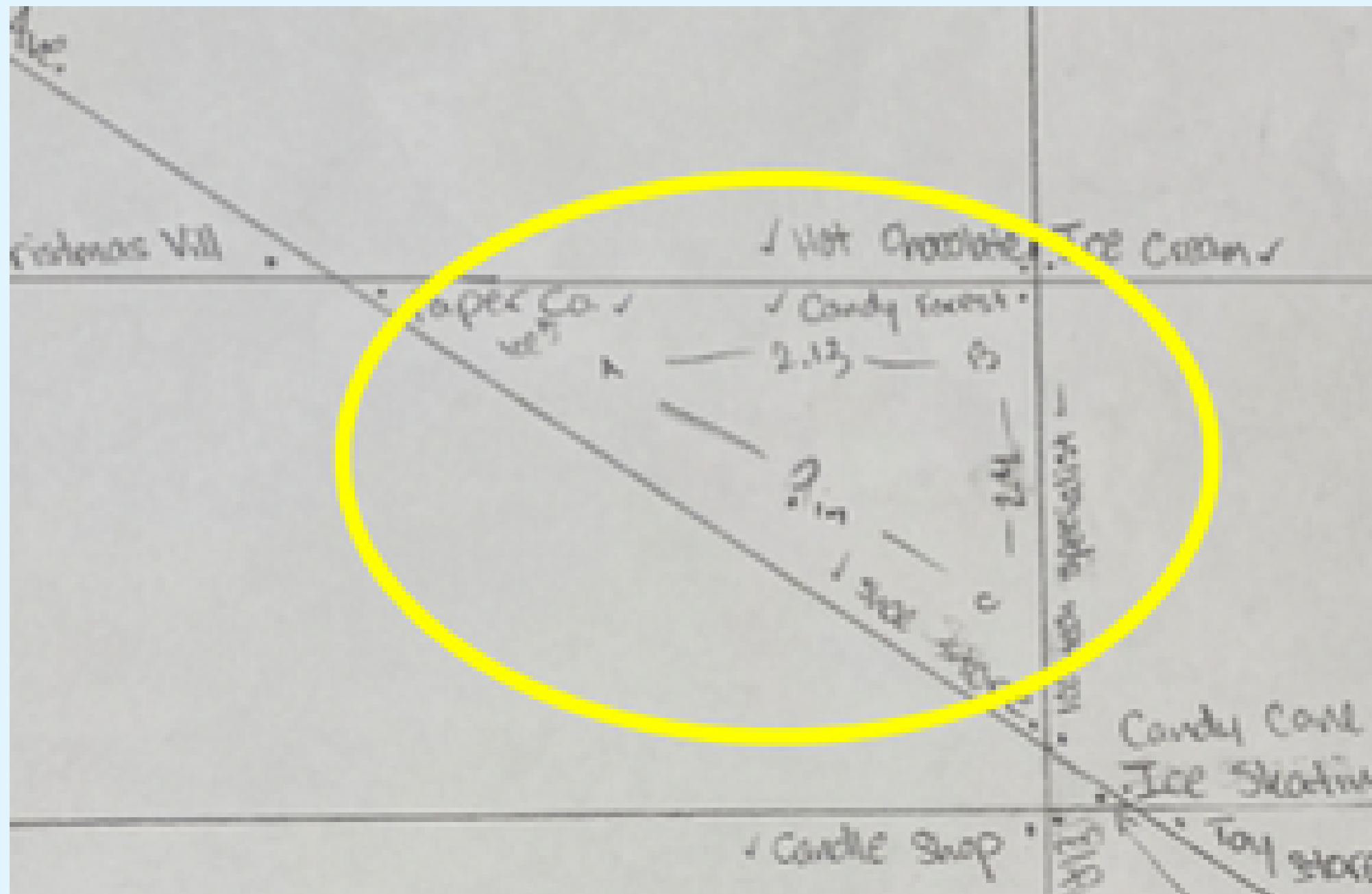
$$x = 45$$

$\angle A = 0.5x + 67.5, \angle B = 45, \angle C = x$	Given
$\angle A + \angle B + \angle C = 180$	Triangle Sum Theorem
$0.5x + 67.5 + 45 + x = 180$	Substitution
$1.5x + 112.5 = 180$	Combine Like Terms
$1.5x = 67.5$	Subtraction Property of Equality
$x = 45$	Division Property of Equality



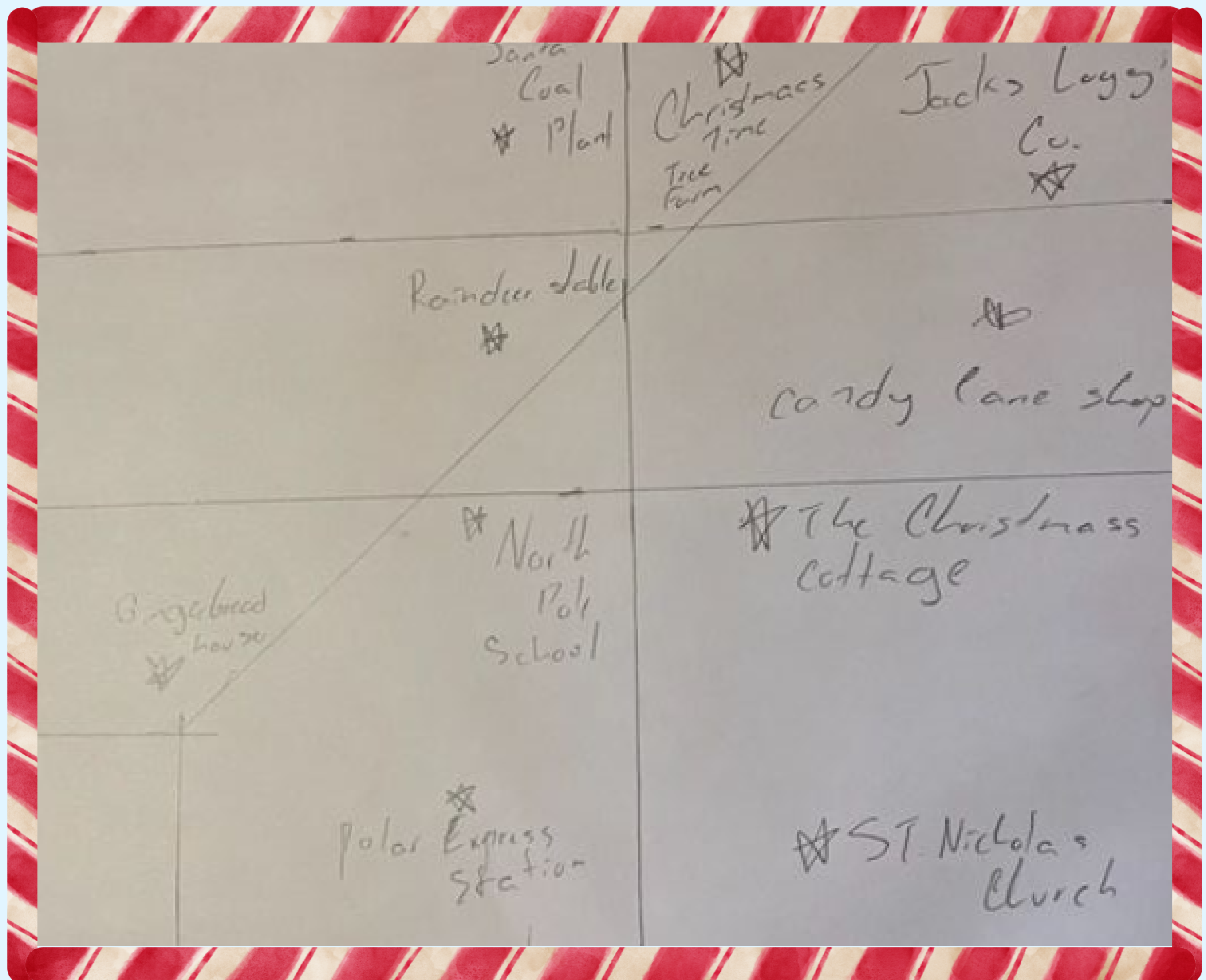
# PROBLEMS:

Pythagorean Theorem problems!



$AB = 2.13$ inches, $BC = 2.4$ inches.	Given
$a^2 + b^2 = c^2$	Pythagorean Theorem
$(AB)^2 + (BC)^2 = (AC)^2$	Substitution
$(2.13)^2 + (2.4)^2 = (AC)^2$	Substitution
$4.54 + 5.76 = (AC)^2$	Simplify
$10.3 = (AC)^2$	Combine Terms
$3.2 = AC$	Square Root

# QUADRANT DESIGNER: JONATHAN



Welcome to the industrialized part of Christmasville! In this industrialized area, you will find everything needed to support Christmasville industrial necessities, such as Santa's Coal Plant, and Jack's Logging Co. You will also find the Polar Express Rail Line, which will take you anywhere you would like in Christmasville. If taking a train isn't your thing, you can buy a reindeer for transportation in the Reindeer Stable.



# INSTRUCTIONS:

Jonathan did not provide instructions.





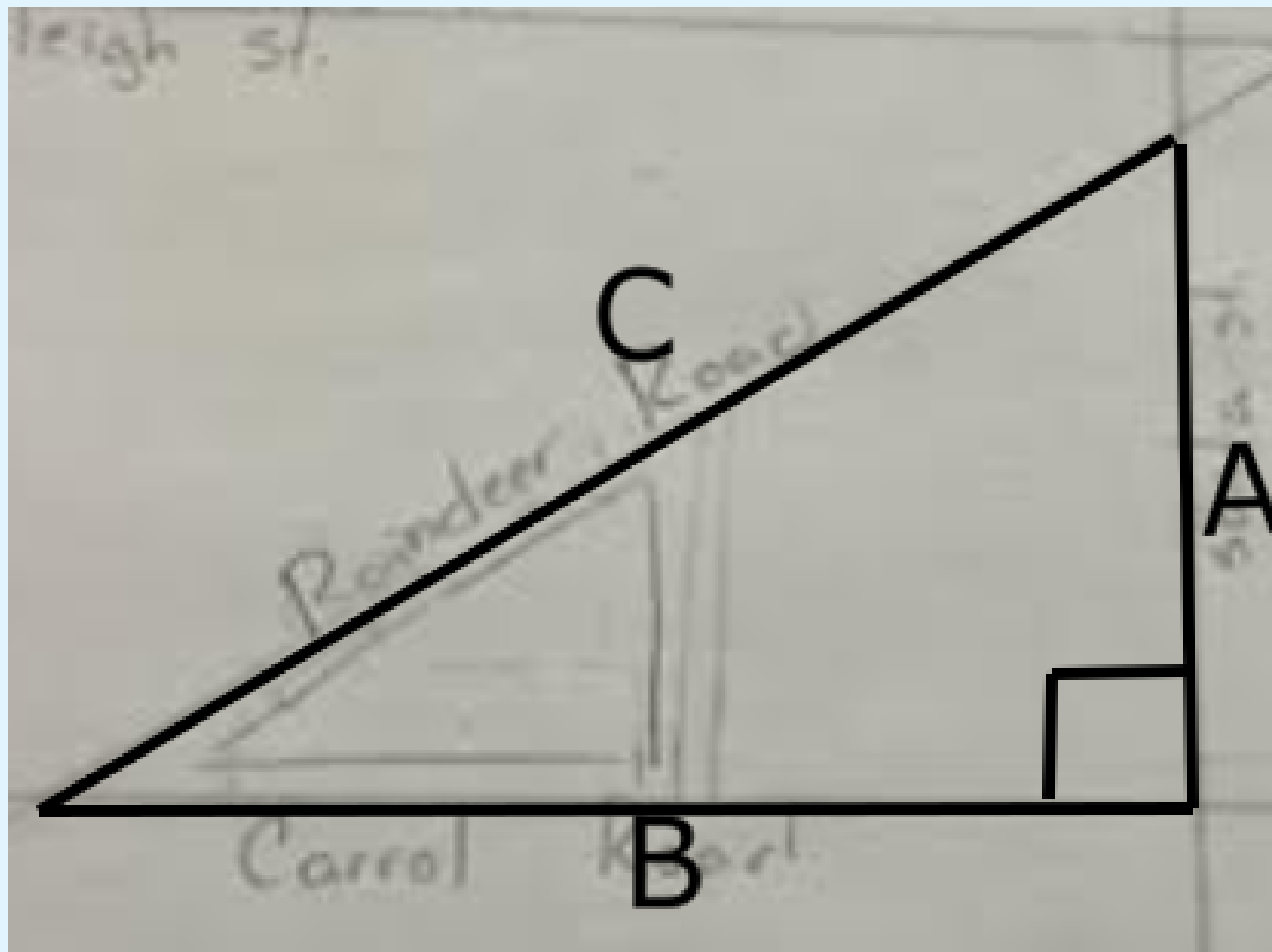
# LOCATIONS:

- Reindeer Stable
- Gingerbread House
- North Pole School
- Polar Express Station
- St. Nicholas Church
- The Christmas Cottage
- Candy Cane Shop
- Jack's Logging Co
- Christmastime Tree Farm
- Santa's Coal Plant

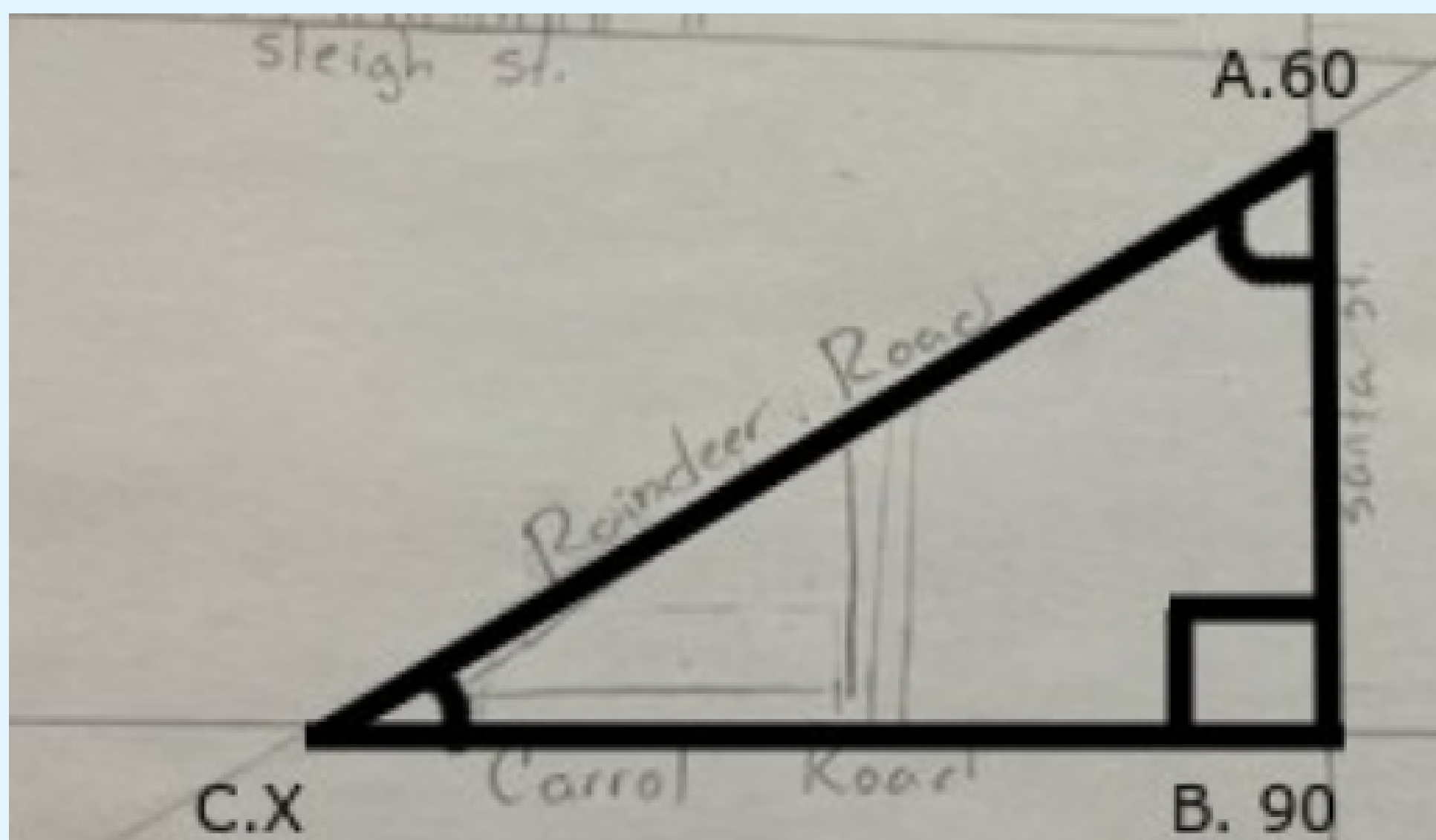




# PROBLEMS:



$A=4$ $b=5.5$	Given
$A^2+B^2=C^2$	Pythagorean theorem
$4^2+5.5^2=C^2$	Substitution
$16+30.25=C^2$	Simplify
$46.25=C^2$	Simplify
6.8	Square Root



A equals to 60 degrees and B equals to 90 degrees. Knowing this, how big is letter C?

$$90+60+x=180$$

$$150+x=180$$

$$150 \quad 150$$

$$x=30$$

## CONCLUSION:

Throughout the process of creating the concept of Christmasville and bringing it to life through drawings and geometry, we learned a lot about communication and how to get things done efficiently. We learned how to divide the work so that we all got done what we needed to but also had fun while doing so. As a group, we've been able to sharpen our skills in collaboration and communication (and math and design and plenty of other stuff!) And of course, we've learned a bit of math, or more than learned, practiced — but still!

Throughout the whole process, our group collaborated efficiently by planning out the things we needed to do each day, and assigning roles for every task. We worked through any issues that arose by assigning whoever was best fit for the role of fixing it, and also solving problems together. Overall, I think that we made a good group and collaborated in a good way.



MERRY  
CHRISTMAS