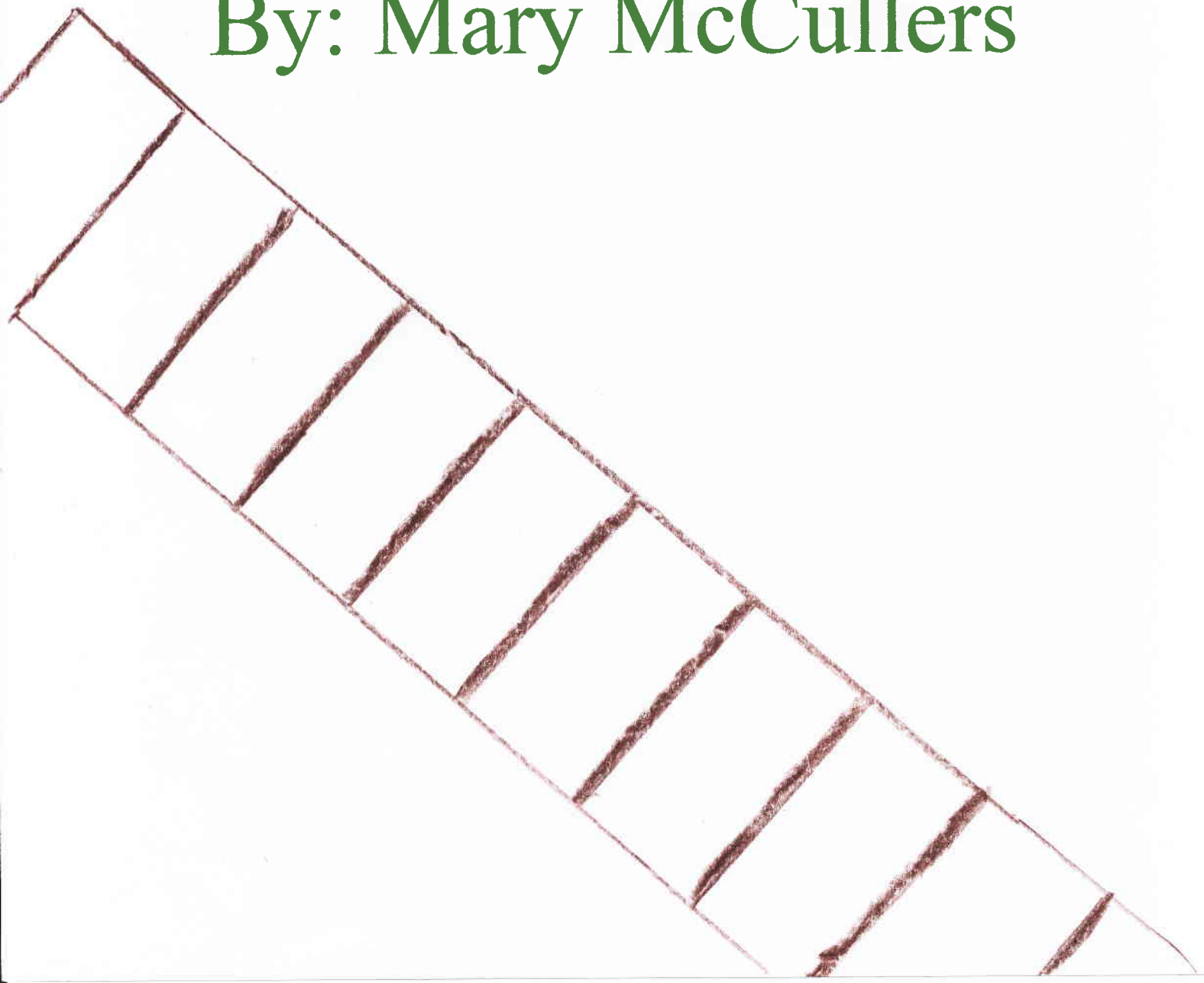
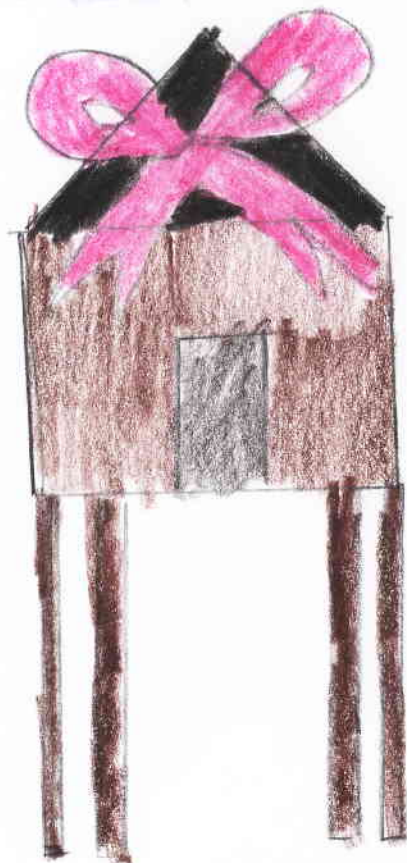


The Ladder For The Tree House!!

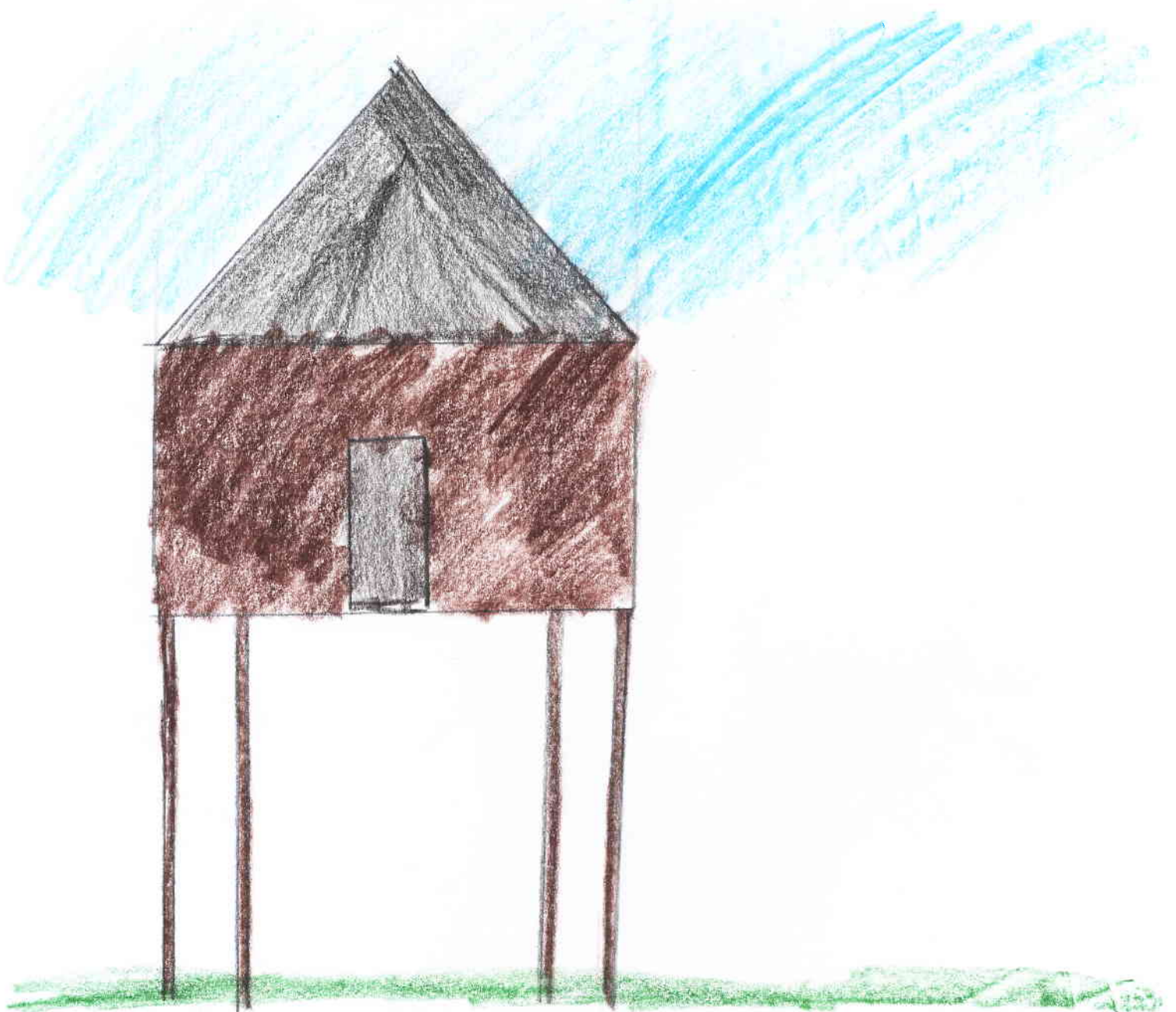
By: Mary McCullers



It is Grace's sixth birthday, and she wants a lot of presents. She mostly wants a tree house for her birthday. Her parents think about it, but they decide not to buy one.



Grace's dad makes her a tree house instead! The tree house looks like a cube with a square pyramid on top of it. He had to go on a business trip before he could finish the ladder. So it was up to Grace to make it.



First she had to figure out how tall the tree house is. Then subtract 8 feet, because that is the distance from the top of the ladder to the top of the tree house. Well Grace's friend Sam wants to help.



So they decide to ask his babysitter, Abby, for help. Well, Abby is in a geometry class, and they had just gone over problems like this the day before.



“Hey Grace,” Abby asks, “What can you tell me about triangles?”

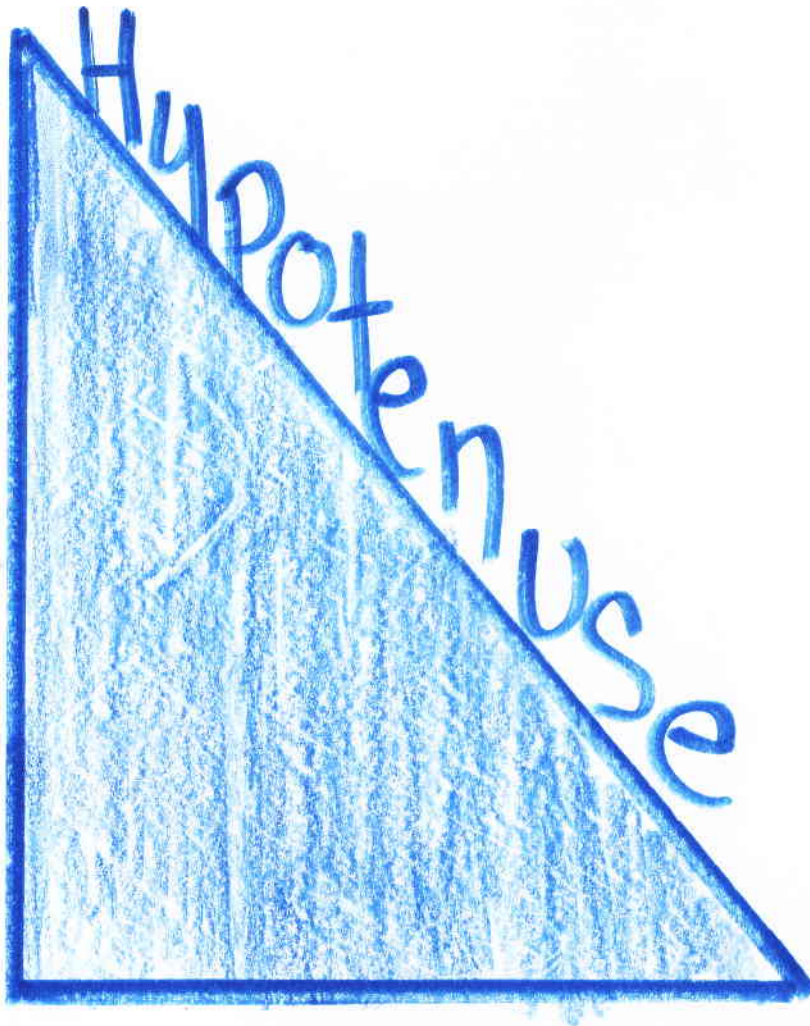
“Well, they have three side and angles”, Grace answers.

“There are also different types,” Sam adds. “There are scalene which means no sides are of equal length, regular which means ALL sides and angles are congruent or of equal length, isosceles triangles have at least two sides congruent, and a right triangle which means two sides of the triangle are perpendicular, or form right angles.”



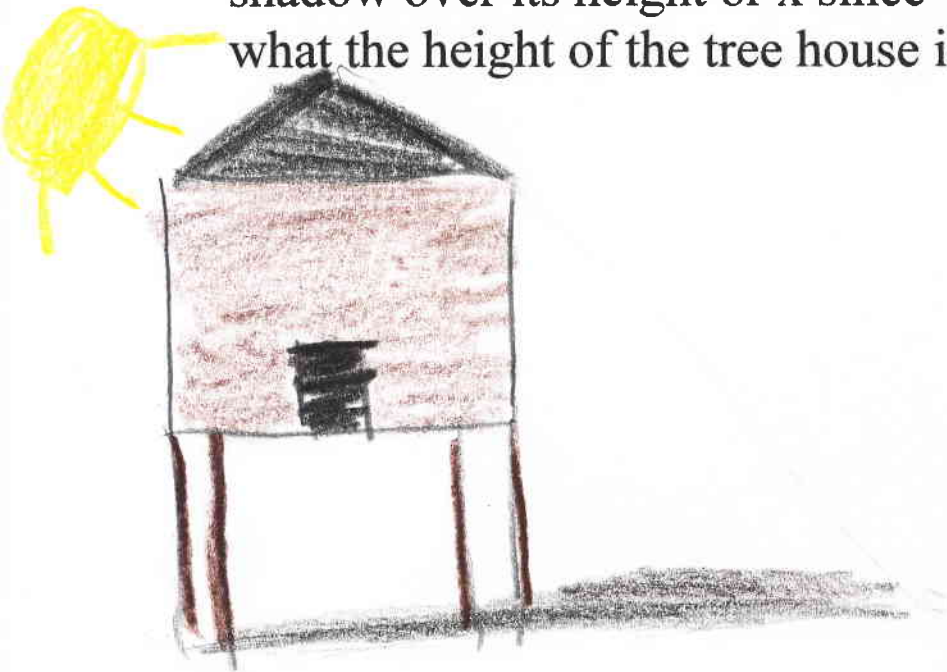
“Isn’t the side across from the right angle called the hypotenuse?” Grace asks.

“Yes it is,” Abby answers.



Abby explains how two triangles can be similar. That means the sides are either made bigger or smaller, but all by the same amount.

“Now,” Abby says, “We measure how tall Grace is and how long her shadow is. Then we measure how long the tree house’s shadow is. We can then make ratios, which are where the length of Grace’s shadow over her height is equal to the tree house’s shadow over its height or x since we don’t know what the height of the tree house is.”



Well Grace is 4 feet tall and her shadow is 4 feet long. This forms a 45° - 45° - 90° triangle, where two sides of a right triangle are congruent.



Well the tree house's shadow is 15 feet; we know the height of the tree house must be 15 feet as well, because like Grace both height and length are equal. Now we use subtraction and subtract 8 feet to see how tall the ladder should be.



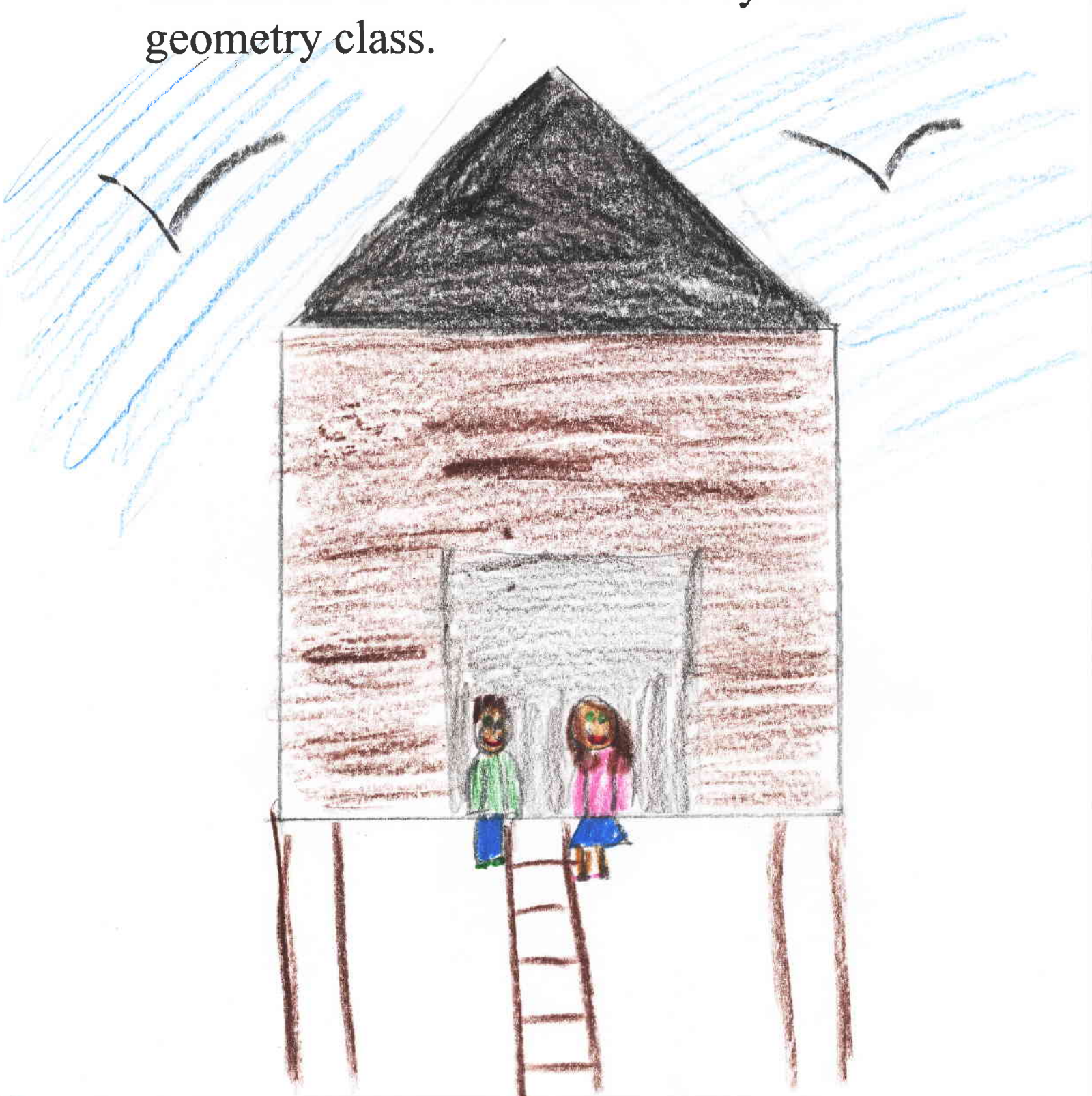
$$15 - 8 = 7$$

ladder is 7 feet

They find out the ladder will be 7 feet tall, so Grace's mom makes a ladder for her.



Now Sam and Grace can play in her tree house, because they have a ladder to get up to it with. They would not have that ladder if it weren't for Abby and her geometry class.



Bibliography

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