



# GIANT GEOMETRY

Furball & Chew

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“Did you read it? Did you read it?” Chew came bounding into the family room and bounced onto the ottoman in front of Furball. She lifted her teacup off the ottoman just in time to avert disaster. “So, did you read it?” panted Chew.

“Yes, I read your story, Chew.” She sipped her tea.

“And? Whadya think? Whadya think?”

“Well, it’s a fun idea, but It’s like *Armageddon*,” she offered. As much as Chew could be super annoying, she didn’t like to hurt his feelings.

“Armageddon? Don’t you think that’s a little...harsh?” Chew couldn’t see what would be fun about Armageddon.

“Not THAT Armageddon,” corrected Furball. “The movie. The one where an 800-mile asteroid is hurtling towards Earth. Lots of bad science.”

“Asteroid? Why would a dog hurtle towards Earth?”

This is becoming another conversational pretzel, Furball thought to herself. She tried to remain patient. “Perhaps you’re thinking of Astro, the dog from the *Jetsons*,” she suggested. I’m talking about the space kind of asteroid in the movie with Bruce Willis.”

Chew’s ears picked up. Had Furball really just compared his story to a Bruce Willis movie?

“Wow! Thanks!”

How could Furball continue without bursting Chew’s bubble? “Uh, yeah, good character development...but the one little thing is this. The science and math are not so good.”

“What do you mean not good?” objected Chew. “I worked it all out on a calculator.”

“Yes, I can see that, Chew, but you can’t just multiply everything by a scale factor. It’s not that black and white.”

“I’m a dog. Everything is black and white.” He crawled back onto the floor, collapsed on his side, and did his best to think of squirrels.

Furball could not let this be the last word. “At least it’s way, way better than your children’s book. What was that called? ‘Things That Rhyme with Orange?’” Chew had fallen asleep and was snoring loudly.

## Your Challenge

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1. Chew's story is provided below. The one fact on which all the others are based is that Hanna went from 5'6" to 275-ft tall. In light of this change of height, some of the other facts are plausible and some are not. Analyze each of the facts to see whether the values that are given make sense. Keep in mind that you're not looking for exact values: you're looking for ballpark numbers. The facts will either clearly make sense or not. For each fact, show your estimations and calculations in an organized step-by-step manor.
  2. Once you're done analyzing the facts in the story, it's time to add a few facts of your own. You'll need three: one involving linear measurement, one involving area, and one involving mass or volume. You can choose to make them true or not, but if you make a fact false, at least make it tempting for other groups to say that it's true.
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## Giant Geometry

By Chew

Hanna has not been to school in a few weeks. It's not that she doesn't want to go; it's that she didn't fit. Until the Wednesday night when she turned into a giant, Hanna was a perfectly normal and acceptable 5'6" tall. Now she's as tall as the 275-foot radio tower in our town.

Nobody really knows what happened. She was having a dream about going on a date with some guy named Jack, who had earlier that day traded in his family's dairy business for some beans and the Porsche convertible in which they were driving, and the next thing she knew she was lying in her pajamas on what seemed to be a smashed dollhouse. She quickly realized that the dollhouse was actually her home, and the small figures scurrying around on the ground were not mice: they were her parents, who were probably wondering how they were going to get their daughter into college. I'm not talking about college acceptances here; I'm talking about getting her *into* college.

Hanna's new height has not affected her friendship with Makena. Although Hanna can't fit in the school anymore, she still wakes up early to carry Makena on her shoulder so she can fill her in on all the recent gossip. They have to walk slowly if they want to have a full conversation because the 3-mile walk takes Hanna only about 150 steps. Hanna has to be careful as she walks because her feet are the length of a car, and she doesn't want to squish anybody. After all, she does weigh about 8500 tons.

Sometimes just for a thrill, Makena rides on Hanna's foot instead of her shoulder. It's a wild ride, and she has to wrap her arms around Hanna's ankle and clasp her hands tightly on the other side so she doesn't fall off.

Although Hanna doesn't understand what happened to her, she says she's thankful that it also happened to all her clothing, even if her only outfit is now pajamas with yellow ducks on them. Fortunately, nobody's going to make fun of a giant! What's funny is that the ducks, which used

to be about 1-1/2-in. high on the original fabric, are now just a little bit taller than Hanna used to be.

Hanna won't always have to wear these pajamas because Makena and a few other friends are making her some new clothes. It's not easy or inexpensive. They're working on a pair of jeans that would ordinarily require 1.5 square yards of fabric. Hanna's new pair requires 75 square yards. It's going to cost about \$525! Fortunately they have a plan for paying for Hanna's new clothes: the silver dollar she gave them.

Apparently, Hanna had been holding a lucky silver dollar in her hand the night of the accident. It, too, was enlarged and is now about five inches thick and thirteen feet wide. It took five of Hannah's friends to move it to my basement.

The girls cut off pieces of the silver dollar and cash them in as necessary. Last weekend they used some of the money to make Hanna a pizza in hopes that it would make her life feel a bit more normal. We tried to make it large enough so it would provide the amount of food her scaled body would require. The one problem we ran into was that the crust was too thin, so we made it about 5 times as thick as a normal pizza. The giant pizza covered a little more than a half acre in Hanna's front lawn, and it required 62,500 pepperoni slices.

Food is often a problem. For instance, to make a bowl of cereal for Hanna, Makena and her other friends have to truck in the equivalent of 13,500 boxes of cereal and cover it with 820 gallons of milk.

We're doing what we do to help every day, and life around here has settled into what could be called "semi-reasonably partway normal." Our biggest challenge now is finding Hanna's birthday present. She wants a dog...and not a tiny dog. She wants it to be properly scaled. Anyone know where we can find an 80-ton golden retriever?