MOLLY MCNINCH: -- means we're creating those proportions. So let's start with Heather and let's look at when you change just the wide and just the -- sorry guys -- just the wide and just the narrow. And then look at Gerry, see what he -- what conclusion he came from based off of his diagram.

Now, once you've gotten all you can, you bring in Judi. Now, Judi doesn't have the right answer, but she does have a jumping point with an equation. She kind of has like a -- almost like a partially mixed equation that you can kind of use and alter. You will find that there's an error. And if so you guys can find the error and fix, it that will help guide you towards what you need.

STUDENT: Okay.

MOLLY MCNINCH: Okay. All right. You good, Max?

STUDENT: Yeah.

MOLLY MCNINCH: Okay.

MOLLY MCNINCH: I think it would be a good idea to start putting a little bit of your thinking on the poster. Just because we have about thirty-five minutes left. So it's, again, it's just a status poster, so I'm not looking for solutions yet.

STUDENT: Okay. Do we have to fill this out?

MOLLY MCNINCH: Yes.

STUDENT: Okay.

MOLLY MCNINCH: So I'll probably -- because third period didn't finish, I'm most likely going to give you a little bit of extra time next class, but not a lot. So try to gather what you can, because you can gain a lot of really valuable insight. I see you have a -- No! -- I see you have a lot of equations already kind of here. But this can kind of guide and almost help you come to a different conclusion based off of what they found.

STUDENT: Okay.

MOLLY MCNINCH: So Gerry -- it looks like you kind of have a better step than Gerry, but he still has some insight.

STUDENT: Do we have to like write it down?

MOLLY MCNINCH: Yeah, I'd write it down, because whatever you don't write down now, you're going to have to --

STUDENT: Is it recommended or is it --

MOLLY MCNINCH: Yes.

STUDENT: But is it --

MOLLY MCNINCH: Like, strongly recommended.

STUDENT: But like do we have to do it?

STUDENT: Yeah. Let's do it. Ready?

STUDENT: Is it mandatory?

MOLLY MCNINCH: I'm going to let you decide that.

STUDENT: Okay, so we used Heather's --

MOLLY MCNINCH: My group of winners.

STUDENT: -- and guessed what the -- we didn't, like, guess, but we found what the question mark would be.

MOLLY MCNINCH: Okay. So you used Heather?

STUDENT: Yeah. So we saw this and we were like, "Oh, let's find what the question mark would be." And it's the wide diameter.

MOLLY MCNINCH: Ah. Interesting. Okay. So what is the W then?

STUDENT: The wide diameter.

MOLLY MCNINCH: So why would she put two different variables for the same thing?

STUDENT: What do you mean?

MOLLY MCNINCH: So you said the question mark is the wide diameter.

STUDENT: Oh, yeah, no. So, like, I don't think she knew what it actually was, but we found out that the one that works is --

MOLLY MCNINCH: I see what you're saying, okay.

STUDENT: -- is the wide diameter.

MOLLY MCNINCH: She knew that there was something that had to be multiplied, but she didn't know what number it was?

STUDENT: Yeah.

MOLLY MCNINCH: Okay. Now, did you also take into account Gerry and Judi?

STUDENT: We looked at Judi's and that's kind of what we were thinking --

MOLLY MCNINCH: Okay.

STUDENT: -- but --

MOLLY MCNINCH: So Gerry has a -- so what Gerry brings to the table is he really brings a good diagram, which a lot of you -- none of you guys had a diagram. So --

STUDENT: I mean, I -- I made this.

MOLLY MCNINCH: Yeah, so Gerry is really that guiding diagram piece. Now Judi will help kind of come to a conclusion. Now, she has this as her initial jumping-off equation. I'll show -- this -- this is her initial jumping-

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off equation. But if you look, from here to here, there's an error. Okay? So use this and what you have. See what you -- what's similar, what's different, and is yours correct or is hers correct? Okay? All right.

STUDENT: Okay.

MOLLY MCNINCH: Good? Yes?

STUDENT: Yeah.

MOLLY MCNINCH: Yeah? Okay.

STUDENT: Here.

MOLLY MCNINCH: Mm-hmm [affirmative].

STUDENT: [Inaudible]

MOLLY MCNINCH: Mm-hmm [affirmative].

STUDENT: So one of them, it was going, like, one three, one four, one five, one six. So for this one we did four four, four five, four six, four seven. Does that make sense?

MOLLY MCNINCH: Yeah. No. That does make sense, but -- so you -- oops, sorry. So you're using the numbers, but if you didn't have the numbers, what would you say is changing?

STUDENT: So you want us to look at like the actual data?

MOLLY MCNINCH: Yes. So the N stands for the "narrow diameter". And the W stands for the --

STUDENT: The wide.

MOLLY MCNINCH: Wide. So if the narrow diameter is one all the way across, it stays the same. What's happening with the wide diameter?

STUDENT: Oh. It's -- is it -- are some of them skewed though, like --

MOLLY MCNINCH: So just look at the N and the W, not the table yet. Okay?

STUDENT: Oh. It's increasing by one.

MOLLY MCNINCH: It's increasing. So as we increase the wide diameter, what happens to the roll radius? Okay?

So now I'm going to lead you to one other thing. So -- now if I have the wide diameter as the same, because it's vertically in these columns, and I change the narrow diameter, what happens to the roll radius? Okay?

So that's going to help you answer the -- the patterns of the data and then the strengths of her solution. Because her solution is a lot of this data, and she used the data to get to this idea. So her strength would be that she has a lot to pull from. Right? So how would you describe what her strengths are?

STUDENT: Okay.

MOLLY MCNINCH: Okay. Does that clarify? Okay, yeah.

STUDENT: Wait, wait, so real quick.

MOLLY MCNINCH: Yeah. Go ahead. Real quick.

STUDENT: So do you want us to, like, go through and answer all these and then continue, like, I don't know, like, trying to --

MOLLY MCNINCH: Trying to make the poster?

STUDENT: Well, like -- I'm still trying to, like, figure, like -- something out that, like, makes the -- works a little bit --

STUDENT: It's so frustrating. This is, like, so close and then, like, so far away.

MOLLY MCNINCH: Okay. So I want you to -- okay. So I see what you're saying. So I do want you guys to fill this out, but what I really want you to think of is using the three papers -- so the three student works -- as helpful tools. So use them as tools to guide your poster. So you can answer these along with looking at their different work. Okay?

STUDENT: Okay.

MOLLY MCNINCH: Now, I'm tell -- I'll tell you, I will give you guys a little bit of time next class. So if you want to use the student work to help find the solution, you will have a little bit more time in class to kind of answer these questions.

STUDENT: And then the poster -- oh, you can go -- you can go.

MOLLY MCNINCH: Oh. I was going to say, and then the poster -- it's also, I'm not looking for a solution poster so much as it's a status poster. So, you know, start to finish, what's your status?

STUDENT: Okay.

MOLLY MCNINCH: Okay? And doesn't need to be spiffy, but I do need to be able to see it from far away.

STUDENT: Okay.

MOLLY MCNINCH: Okay.

MOLLY MCNINCH: So you're using the student work to answer these questions, because --

STUDENT: -- not a good answer.

STUDENT: Let's see the --

STUDENT: So you get R --

STUDENT: And solve for it. And see if it works.

STUDENT: -- R plus three is R minus five over two.

MOLLY MCNINCH: All right, so ladies and gentlemen, can I have your focus over here, please.