Description: Early Algebra Ideas Involving Two Variables: Clip 17 of 18, Presenting Ideas About Problem 8 **Date: 1993-10-01** **Location: Harding Elementary School** **Researcher: Robert B. Davis**	**Transcriber(s): Spang, Kathleen** **Verifier(s): Yedman, Madeline** **Date Transcribed: Fall 2010** **Page: 1 of 3**

. So we're particularly looking for formulas like this where you don't need to know the number in the triangle, all you need is to put the number in the box and that will tell you the number in the triangle. OK, um, I think we really have come close to being out of time would anybody like to say anything about this?

Bobby We've got a secret about the whole thing.

RBD You've got a secret about the whole thing, OK, well we got time to do a couple more things. You want to say it to the camera or to everybody?

Bobby To the camera. It's just for number eight.

RBD Who's talking?

Amy Lynn He can.

Bobby Well, like here it's zero and then it goes plus two then plus four then plus six then plus eight then plus ten. Then more, plus twelve then plus fourteen

RBD You wouldn't be willing to tell that to everybody.

Bobby Yeah, why not? It works for this one.

RBD But it might be an interesting idea. Let me write the table to show this [Writes on board.

8.

□	△
0	0
1	0
2	2
3	6
4	12
5	20
6	30

]

OK, they have an interesting idea that maybe you've all thought of, but it's worth making sure you know it. Would you explain it to everybody?

Amy Lynn It starts at…you explain it I'm not good at explaining it.

Bobby Here it's zero and then this is two then four, then six, eight, then ten and if you keep going down it would be twelve, fourteen if it went on.
[Bobby writes on board

8.

□	△	
0	0	> 0
1	0	>2
2	2	>4
3	6	>6
4	12	>8
5	20	>10
6	30	

]

RBD OK, I think that's worth thinking about, Jeffery did you have something to show?

Jeff Should I show everyone?

RBD It's up to you are you ready to show everyone?

RBD OK, anybody else coming to help, or are you doing it by yourself?

Jeff I'll do it by myself. Basically when you start with two zeros you're going to subtract, you know how when it's like box times box plus one equals triangle, but if it's there's two zeros starting out it's going to be box times box minus a number equals triangle. We don't really know, but we tried different numbers and it works out every time. Yes you do, if there's double zeros on the thing, you minus. Yeah we did we subtracted on eight and subtracted on nine too. No I'm not going to show you my paper.

RBD OK, how many people got this, some people have the formula for this and I think Jeff actually had the formula for this. Does anyone else have the formula for this? Jeff, yeah, you're working with Stephanie, and Michelle, and Mike is that right? Matt too, so the four of you. OK, but they're carefully not showing you their formula, but they did tell you one interesting thing to think about.

Michelle I We're ready to explain what we got.

RBD OK.

Brian OK, everybody goes up. Should I write I don't think I should write? I don't know what to write. Should I just this out. Well, see, don't erase the whole thing. OK, you just divide basically to get the answer.

[Brian is referring to Δ / □

Romina writes:

8.

□	△	
0	0	> 0
1	0	>2
2	2	>4
3	6	>6
4	12	>8
5	20	>10
6	30	

]

Like, divide two into two and you get one, if you multiply two times one plus zero you get two and that's what you're supposed to get because two's in the triangle. And the triangle's supposed to be at the end. Divide six times three and you get two.

Romina [Romina has written on the board (□)(□)-□ = □(□-1)]

RBD I think you mean divide six by three and you get two.

Brian You do. Awesome, and that's one and then you take the one and the two out of there and the two times one, I have to move down, and then you just plus zero cause that's the number you have up there to start with and then it equals that two. This number should always be in the triangle at the end. [Wrote on board: (2[2=1 (2 × 1) + 0]

RBD OK, I'm not sure that everybody could follow that or not it's a nice idea, but it's not quite this formula. What did they, they depend on using the number in the triangle right, and when you really want a formula you want something where if you didn't know the number in the triangle, you could do something with the number in the box to get it. This is a nifty idea, and you could use it, but it does something different.

RBD OK. I'd show you one last problem. Now, we wouldn't solve it today it's a very hard problem,