| Description: Dawud working on problem 1 | Transcriber(s): Yedman, Madeline |
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| Parent Tape: Early algebra: Investigating linear | Verifier(s): DeLeon, Christina |
| functions, Series 2 of 7: Working on Guess my rule | Date Transcribed: Spring 2013 |
| problems 1-3 | Page: 1 of 4 |
| Date: 2005-11-02 |  |
| Location: Frank J. Hubbard Middle School - Plainfield, |  |
| NJ |  |
| Researcher: Carolyn Maher |  |

Description: Dawud working on problem 1

Time Speaker Transcription

| X | Y |
| :---: | :---: |
| 0 | 1 |
| 1 | 3 |
| 2 | 5 |
| 3 | 7 |
| 4 | 9 |
| 5 | 11 |

00:00 Dawud I think my rule gunna be add one. You just add one, you just add one every time you go up.
R1 What like this? (Pointing to number in X column.)
Dawud Yeah like go one then go two, then it go three, then it go four, then it go five, then it go six. You just adding one.
R1 So the X's are adding one.
Dawud Yeah
R2 What about the Y's?
Dawud They Y's, they just are the same like, when you put one it equals over here. Like when we put two it comes right there (points to X axis)
R2 Okay
Dawud And then we go three, it counts right here. Say the number supposed to add with, and it goes to the opposite side.
00:47 R2 Okay I'm not sure I understand, I'll read what you write down.
Dawud Writes: When add the number like $0+1=1$ goes to the $x$ 's
R2 When add the number like zero plus one, one does to the x's. So if you Have zero plus one (overhead announcement) One plus one get two? I see, do you have a rule? About how I could get the, if I gave you an $x$ how you would get the $y$ ? Remember when we did that? The guess my rule.
Dawud That when you get the $x$, you add one. Then you add one it goes to the $x$ 's side, then you add that number, which comes to the x's side. So basically when you add the number it's going to go to the $x$ side.
R2 Okay, what about the y side? Do you have any rule for the y side?

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|  | Dawud | Yeah, it goes by two. Like one, two |
| :---: | :---: | :---: |
|  | R2 | Three, oh three plus two is five, five plus two is seven, like that? |
|  | Dawud | mhmm |
| 1:47 | R2 | Lets see, maybe you should write that too. So you have two rules. |
|  | Dawud | Writes: When add like numbers like $0+1=1$ goes to the $x$ 's the $y$ 's side add two. Read this. For the y side, when you add two. |
|  | R2 | What about this, suppose I told you I had something like this ( $\mathrm{y}=\mathrm{x}+\mathrm{x}+1)$ |
|  |  | What do you think of that rule? |
|  | Dawud | y equals xx . Which y would be to (inaudible) plus one. |
|  | R2 | Do you think that rule is true? |
|  | Dawud | It can if you rearrange the numbers. |
|  | R2 | How do you mean? |
|  | Dawud | Like x equals y plus x and then oh! I think this |
|  | R2 | You know the reason why I said I thought this was true? Because if $x$ is zero, I get zero plus zero plus zero plus one equals one. |
|  | Dawud | Yeah, you would get that. |
|  | R2 | Would that work for all of them? |
|  | Dawud | No. Because one, look. If you go in order this side. One, two, three, four, five. |
|  | R2 | Okay, what about one, three? One plus one plus one is three, so it works f for this one right? |
|  | Dawud | Mhmm. |
|  | R2 | Do you think it works for all of them? |
| 3:10 | Dawud | Yeah, like if you add it with some of the numbers. Like for this one four, two, two plus one, plus one. Equals four. So when you use this number (points to x ) you got to change it. Like for this one (points to number four) this one would be five. Three plus one plus one equals five. For this one (points to number five) three plus two plus one equals six. |
|  | R2 | Okay |
|  | Dawud | Three plus one plus one equals five. |
|  | R3 | Three plus |
|  | Dawud | one |
|  | R3 | No, if you mean to say this $x$ is three right? |
|  | Dawud | uhuh. |
|  | R3 | Then what should be here? (points to second x ) |


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Dawud One.
R3 But this is also x , it has to be the same value correct?
Dawud No.
R3 I mean if you already have three then the other should be three right?
What ever number we put here (points to first x ) we should also put here (points to second x )
Dawud Two plus two plus one equals five.
R3 So is it five?
Dawud Yeah
4:17 R3 Then can you explain me this?
Dawud Huh?
R3 Will you explain the last (inaudible)
Dawud Mumbles inaudible numbers to himself
R3 Okay let me explain lets see how this works for this. Like look at this.
Dawud X don't have to be both.
R3 Zero plus zero plus one is one. See how you have one. Lets do this one (points to numbers one and three) x will be one and y will be three, so x is what here? Okay $x$ is two and $y$ is five.
Dawud Two plus two plus one is five.
R3
Five, very good. Lets check this, three plus three plus one.
DawudSeven
R3 Seven, so what do we do about this? (points to four and nine). Here, you doing good now.
5:19 Dawud Four plus four plus one equals nine.
R3 Is that correct?
Dawud Yupp
R3 And what about this? (points to five and eleven)
Dawud Five plus five plus one equals eleven.
R3 Okay, now let me ask you something. If I give you some $x$ values like six, seven, eight, nine, ten. Can you find out the y values? And write it down.
Dawud Writes: 13,15,17,19,21
R3 Okay, can you explain to me how you go this?
Dawud Cause one, three, five, seven, nine, eleven. Two. So you add two. Thirteen, fifteen, seventeen, nineteen, twenty-one.
R3 Okay, but then we were checking, we were checking it differently right?

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We were using this here right? (points to equation $y=x+x+1$ ) So what was this then?

6:21 Dawud Six. See I can explain myself. Six plus six equals twelve, plus one equals thirteen. For fifteen you could put seven plus seven plus one for fifteen. (inaudible) for twenty ten plus ten plus one equals twenty-one.
R3 Okay, incase I give you a number lets say, 100.

