

Partial transcript

199

200 T: Or this was multiply and maybe you need to divide it. So,
201 kind of what we want to do is the opposite. So, let's take a
202 look at one that's in context. Let's take a look at one that's in
203 context. So if we look at problem number one, we're gonna
204 work through this together. So, number one in your handout, it
205 says an employer paid each employee a base salary of twenty
206 four dollars a day plus an additional four ten per hour. So the
207 first thing we want to do is find out how the employer would
208 determine how much to pay. So we want to know...in other
209 words, if you put in the number of hours that you worked, how
210 would you determine your earnings. So take a minute right
211 now at your table and see if you can come up with a rule that
212 would compute the earnings.

213 Hank: x times four ten?

214 Bret: Well, we'd have twenty four, the base, plus...plus the...I
215 keep writing fours... Plus the four ten per additional hour and
216 then X is the additional hours. [writes on paper $24 + 4.10x$,
217 Hank writes on his paper as well]

218 R: Does that make sense?

219 Hank: He's a genius. This kid's a genius. [to the researcher]

220 R: Did it make sense to you, Hank?

221 Hank: Yeah, Cause I was thinking, because we don't know
222 how many hours there is [inaudible] but he normally gets paid
223 [is pointing to what is written on his paper]

224 R: How about the second part to that?

225 S: [inaudible]

226 R: Well, what does the X represent, by the way, here?

227 Bret: The number of hours.

228 R: That's the number of hours.

229 Bret: Yeah.

230 R: Okay. [pause]

231 S: [inaudible]

Small group 214-318

204 – 216 [C] (GFS)
Generate function rule.

214-218 [S] (CED) Hank
states a rule $x * 4.10$ –
connects rule to real
situation.

219-224 [R] (CED) Does
 $24 + 4.10x$ make sense?

225-232 [C] (GFR and
CED). Create a rule and
tell why it makes sense.

227 – 231 [R] (CED)
What does x represent?

Partial transcript

232 R: Do you see the relationship between these two? [is
233 pointing to two different questions on the paper, to Bret who
234 nods yes]
235 Bret: Yeah. So, for this, we take the amount earned...
236 R: mmmhmm.
237 Bret: Yeah, you take the amount earned...
238 R: And you do something to it to get the number of hours.
239 Bret: let's just say A would be the amount earned and we'd
240 subtract twenty four because we automatically add twenty four
241 [appears to point to first question on paper]. And then we'd
242 [inaudible]. Then we'd divide the rest by four ten to determine
243 how many hours were worked. [has written a rule on his
244 paper]
245 R: hmmm. How would you verify that was right?
246 Bret: Put in a value for X.
247 R: Okay.
248 Bret: Like...let's just say two because it's easy to do. And
249 then we'd have eight twenty plus twenty four. So we'd have
250 thirty two twenty. Put that in for here, minus twenty four and
251 then we'd get eight twenty again, divide that by four ten and
252 we'd get two back, which is what we got first. [is writing on
253 paper]
254 Hank: all right. [inaudible]
255 R: [to Hank] why don't you try one.
256 Hank: What do you mean?
257 R: Try an example like Bret did.
258 Hank: Like put in a number for this and this?
259 R: Yeah.
260 T: ...Now, to do that, what you would need to do was use the
261 inverse rule. So, take a minute, if you haven't already. What
262 would be the inverse equation? That is, how would you figure
263 out how many hours I have to work if I want to earn a certain
264 amount of money?

233- 245 [C] (CED) What is the relationship between the two questions?

240 -245 [S] (DP) What do you do to get the number of hours?

246 - 272 [R] (CR) Verify that the rule generated is right.

247-254 [S] (PE) Put in a number for x.

256 - 272 [R] (PE) Put in 2 for x.

Partial transcript

265 R: [a comment to Hank about using the calculator]
266 Hank: yeah, no no, [inaudible] I can figure this out [inaudible]
267 [Hank writes on his paper] [pause]
268 R: What do you think Hank?
269 Hank: mmhmm
270 R: What did you do?
271 Hank: I did the four hours.
272 R: How would you explain to somebody what you did?
273 Hank: I put some hours in for x, I did the problem. then down
274 here I put that
275 R: That forty forty, what does that mean?
276 Hank: That's how much he made that day.
277 R: Okay.
278 Hank: And then down here I took the 24 away from forty forty
279 and divided by four ten.
280 R: Now, how are these two rules related to each other [points
281 to the last question on the page] that's this next question.
282 Bret: Well, you use the solution from one to solve two and
283 then with two, the solution of that gives you X for number one.
284 R: All right. Can you use, have you ever used language input,
285 output?
286 Hank: mmhmm
287 Bret: Yeah.
288 R: So, how would that relate to what you just said?
289 Bret: Well, the input for one is the output of two and the input
290 of two is the output of one.
291 R: So, what do... So, have you worked with those things
292 before? Where input is [Bret nods yes] the output and the
293 output is the input? What do you call them? Do you
294 remember?
295 Bret: I'm pretty sure that's inverse. I don't really remember.

271- 280 [R] (DP)
What did you do?

276-278 [R] (CED)
What does forty forty
mean?

281-291 [C] (CED).
How are the two rules
related to one another?

293 - 296 [R] (IO)
What do you call it
when the output is the
input and the input is
the output?

Partial transcript

296 R: Can you make up another rule and an inverse?
297 Bret: Hmm...
298 Hank: I don't know
299 R: I don't know. Do you guys work at all?
300 Hank: yeah I work.
301 R: So, if you know the number of hours you're working, you
302 multiply by...
303 Hank: How much I get paid and that would tell me how much
304 I would get paid for the week. And
305 R: Yeah. Then if you knew how much you got paid, you
306 could figure out hours by doing what?
307 Hank: By taking away, say what, okay I have to think about
308 this.
309 R: Yeah think about this.
310 Hank: The amount I am being paid, how many hours I work a
311 day and how many days I work a week.
312 R: Oh, yours is more complicated. But do you get a daily rate
313 plus an hourly rate or just by the hour?
314 Hank: By the hour. Plus I get commission, but I don't know
315 how much the commission is going to be.

297 – 317 [R] (GFS)
Can you make up
another rule and an
inverse?

300- 317 [R] (DP)
Describe how you get
paid.