Group Members and Roles:
E – Solver
M – Listener / Scribe
G – Listener

Problem 9: The Drummer:

Two women, Arlene and Cheryl, and two men, Burton and Donald, are musicians. They are a pianist, a violinist, a flutist, and a drummer, in some order. On a day they were seated around a square table:

1. The person who sat across from Burton was the pianist.
2. The person who sat across from Donald was not the flutist.
3. The person who sat on Arlene's left was the violinist.
4. The person who sat on Cheryl's left was not the drummer.
5. The flutist and the drummer were married.

Who is the drummer?

Solution:

Cheryl is the drummer, who is sitting across from Donald the violinist; Donald is sitting to the left of Arlene, who is the pianist, and Arlene is sitting across from Burton the flutist.

Conversation:

E: Alright, a square table...I assume that means everyone sits on one side right? Or is that the trick to solving the problem?

G: I don't think it'd be possible to have 2 people on the same side, with the hints we have

M: Right, that wouldn't work.

E: Also, what does “the flutist and the drummer were married” mean? How does that help? Do they want us to assume that this is a heterosexual marriage?

M: Probably, this would mean that the flutist and drummer have opposite genders.

E: Alright, we'll assume that. The first thing I notice is that Arlene can't be the violinist (the violinist sits to her left). And, the person to Arlene's right cannot be Burton, since the person across from him must be the pianist, which would contradict the fact that the person to Arlene's left is the violinist.

Let’s suppose Burton is to Arlene's left:

	Arlene/??	
??/pianist		Burton/violinist
	??/??	

E: OK, the person across from Burton is the pianist… so Arlene and the person across from her must be the drummer and the flutist, in some order. But then those two people are married, so the person across from Arlene must be Donald. So we've got this, since Cheryl is the only person left:

	Arlene/??	
Cheryl/pianist		Burton/violinist
	Donald/??	

G: OK, but Arlene is to Cheryl's left, so…

E: So, Donald must be the drummer and Arlene must be the flutist:

	Arlene/flutist	
Cheryl/pianist		Burton/violinist
	Donald/drummer	

M: But wait… the person across from Donald can't be the flutist.

E: Rats. OK, we started this by assuming Burton was to Arlene's left. The only alternative to that is that Burton is across from Arlene, which makes Arlene the pianist:

	Arlene/pianist	
??/??		??/violinist
	Burton/??	

M: OK, that's all right so far.

E: Now, the flutist and the drummer are married. That means that Burton and Cheryl must be married, and Cheryl must be sitting to Arlene's right, and so Donald must be on the left:

	Arlene/pianist	
Cheryl/??		Donald/violinist
	Burton/??	

G: OK, but what does Cheryl play? It could be either the flute or the drums.

E: No. The person across from Donald isn't the flutist, and so that means Cheryl must be the drummer, and Burton must be the flutist:

	Arlene/pianist	
Cheryl/drummer		Donald/violinist
	Burton/flutist	

M: Is this consistent with all the clues?

E: Let's consider them:

1.	The person who sat across from Burton was the pianist	OK
2.	The person who sat across from Donald was not the flutist	OK
3.	The person who sat on Arlene's left was the violinist	OK
4.	The person who sat on Cheryl's left was not the drummer	OK
5.	The flutist and the drummer were married	OK

But… could there be another solution?

G: Does that matter?

M: It would be nice to know. What's absolutely forced in our analysis?

E: Well, Burton has to be opposite Arlene, so Arlene has to be the pianist, and the violinist must be to Arlene's left. And, that does force Cheryl to be to Arlene's right and to be the drummer, since she must be married to Burton and the person across from Donald cannot play the flute (and Donald must be opposite Cheryl by elimination).