



Problem of the Week

Problem D and Solution

The Second Escape

Problem

Ingrid, Jayant, Neela, and Radko each brought a group of friends to POTW Escape. Each group completed a different escape room: Backwards Thinking, On the Moon, The Family Reunion, or Time Trials. Each of the rooms had a different-coloured door: blue, green, red, or white. While they were in the rooms, each group asked for hints to help them. One group requested 2 hints, another requested 3 hints, another requested 4 hints, and another requested 5 hints.

Use the clues below to match each group with the name of their escape room, the colour of its door, and the number of hints their group requested.

- (1) The group that completed The Family Reunion asked for one more hint than Neela's group.
- (2) Radko's group went through the green door and requested one fewer hint than the group that completed Backwards Thinking, but one more hint than the group that went through the blue door.
- (3) Ingrid's group went through the white door.
- (4) The group that completed Time Trials went through the red door and requested two fewer hints than the group that completed On the Moon.

Solution

From clue (2), we are given information on three different groups. Of these, the group that requested the fewest number of hints went through the blue door. Radko's group requested one more hint and went through the green door. The final group requested one more hint and completed Backwards Thinking. This gives us two possibilities. Either these three groups requested 2, 3, and 4 hints, respectively, or they requested 3, 4, and 5 hints, respectively. We summarize what we know so far for each of these possibilities in the following tables.

Possibility 1:

Number of Hints	2	3	4	5
Group Leader		Radko		
Room Name			Backwards Thinking	
Door Colour	blue	green		

Possibility 2:

Number of Hints	2	3	4	5
Group Leader			Radko	
Room Name				Backwards Thinking
Door Colour		blue	green	



Then, from clue (4) the group that completed Time Trials went through the red door and requested two fewer hints than the group that completed On the Moon. This means the group that completed Time Trials and went through the red door requested either 2 or 3 hints. From this we can eliminate Possibility 1 because neither of the door colours for the rooms that requested 2 or 3 hints can be red. So we will continue with Possibility 2, and conclude that the group that completed Time Trials and went through the red door requested 2 hints. This means that Radko's group completed On the Moon. We summarize what we know so far in the following table.

Number of Hints	2	3	4	5
Group Leader			Radko	
Room Name	Time Trials		On the Moon	Backwards Thinking
Door Colour	red	blue	green	

Then, the group that completed The Family Reunion asked for 3 hints, so from clue (1), Neela's group completed Time Trials. We summarize what we know so far in the following table.

Number of Hints	2	3	4	5
Group Leader	Neela		Radko	
Room Name	Time Trials	The Family Reunion	On the Moon	Backwards Thinking
Door Colour	red	blue	green	

Then, the group that completed Backwards Thinking went through the white door. From clue (3) we can conclude that this was Ingrid's group. Finally, it follows that Jayant's group completed The Family Reunion. The completed puzzle is shown.

Number of Hints	2	3	4	5
Group Leader	Neela	Jayant	Radko	Ingrid
Room Name	Time Trials	The Family Reunion	On the Moon	Backwards Thinking
Door Colour	red	blue	green	white