

Game 38 – Security Guards

Exactly six security guards—Garcia, Hiram, Koontz, Llewellyn, Schuman and Torrington—will each patrol a building during exactly one three shifts—morning, evening and graveyard. Exactly two guards will be on duty during each shift, with one guarding the front door and one guarding the rear door. The following conditions apply:

Of Koontz and Torrington, exactly one guards the front door.

If Llewellyn is not on the same shift as Koontz, he is on the same shift as Schuman.

Garcia guards the front door.

1. Which one of the following could be a complete and accurate list of the guards assigned to each shift and the door which each is guarding?

	<u>Shift</u>	<u>Front Door</u>	<u>Rear Door</u>
A.	Morning:	Koontz	Llewellyn
	Evening:	Torrington	Schuman
	Graveyard:	Garcia	Hiram
B.	Morning:	Llewellyn	Koontz
	Evening:	Garcia	Torrington
	Graveyard:	Hiram	Schuman
C.	Morning:	Torrington	Koontz
	Evening:	Llewellyn	Schuman
	Graveyard:	Garcia	Hiram
D.	Morning:	Llewellyn	Koontz
	Evening:	Hiram	Garcia
	Graveyard:	Torrington	Schuman
E.	Morning:	Garcia	Koontz
	Evening:	Hiram	Llewellyn
	Graveyard:	Schuman	Torrington

2. If Llewellyn is on duty during the same shift as Koontz, and if Llewellyn guards the front door during that shift, which one of the following could be true?
 - A. Torrington and Schuman are on duty during the same shift, with Schuman guarding the rear door.
 - B. Torrington and Schuman are on duty during the same shift, with Schuman guarding the front door.
 - C. Hiram and Schuman are on duty during the same shift, with Hiram guarding the rear door.
 - D. Hiram and Schuman are on duty during the same shift, with Hiram guarding the front door.
 - E. Hiram and Garcia are on duty during the same shift, with Garcia guarding the rear door.

3. Which one of the following could be true?
 - A. Llewellyn is on duty during the same shift as Schuman, who guards the rear door.
 - B. Garcia is on duty during the same shift as Koontz, who guards the front door.
 - C. Koontz is on duty during the same shift as Torrington, who guards the front door.
 - D. Koontz is on duty during the same shift as Hiram, who guards the front door.
 - E. Hiram is on duty during the same shift as Llewellyn, who guards the front door.
4. If Hiram and Schuman are on duty during the same shift, then for how many guards can it be determined what door they guard?
 - A. one
 - B. two
 - C. three
 - D. four
 - E. five
5. If Torrington is on duty during the same shift as Garcia, which one of the following could be true?
 - A. Koontz is on duty during the same shift as Schuman.
 - B. Hiram is on duty during the same shift as Llewellyn.
 - C. Llewellyn guards the rear door.
 - D. Koontz guards the rear door.
 - E. Torrington guards the front door.
6. If Schuman guards the front door and Torrington guards the rear door, which one of the following is a pair of guards who could be on duty during the same shift?
 - A. Garcia and Llewellyn
 - B. Koontz and Torrington
 - C. Garcia and Koontz
 - D. Hiram and Torrington
 - E. Torrington and Llewellyn

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1. C
2. A
3. A
4. D
5. C
6. B

This is a good example of a game where the exact groups are never known—only their relationship.

Question 1 is C—all the other answers break a rule, as is the case on most initial "rule testing" questions. On Question 2, you can deduce based on the first rule that Torrington is guarding a front door; therefore, Torrington and Garcia guard front doors, whereas Hiram and Schuman guard back doors. You don't know which shift. This eliminates answers B through E. On Question 3, four of the answers break a rule; for instance, D breaks the Koontz and Llewellyn rule.

For Question 4, you can deduce that Llewellyn must be with Koontz, leaving Torrington with Garcia. This means Garcia must be guarding the front door and Torrington must be guarding the rear door, which in turn means that Koontz is guarding the front door and Llewellyn, the rear door. This places four guards—you don't know about Llewellyn and Hiram because no rules implicate them.

In Question 5, you can deduce that Koontz guards the front door, since Torrington is guarding the back door with Garcia guarding the front door. You do not, however, know who Koontz is on the shift with. It could be Llewellyn or Hiram, with the other guard on shift with Schuman. (However it can't be Schuman with Koontz because Llewellyn has to be with one of them). This arrangement eliminates four of the answer choices.

Question 6 involves deducing that Garcia and Koontz are the other guards at the front door in addition to Schuman. The other three must guard the rear door. This arrangement excludes four of the answers.