

## Game 37 – Ancient Temple

Archaeologists are investigating an ancient temple which has four pillars in the center in the following arrangement:



The pillars are facing in such a way that the south sides of pillars 1 and 2 face the north sides of pillars 3 and 4, respectively, and face no other sides of any pillar. Each pillar has exactly one engraving of either a falcon or a lion on both the south side and the north side. The following conditions apply:

At least one side of each pillar displays a lion.

Sides which face each other do not display the same engraving.

If the north side of pillar 2 displays a lion, the north side of pillar 3 displays a falcon.

- Which one of the following could be true?
  - Both the north side of pillar 1 and the south side of pillar 3 display a falcon.
  - Both the north side of pillar 1 and the south side of pillar 2 display a lion.
  - Both the south side of pillar 2 and the south side of pillar 3 display a falcon.
  - Both the north side of pillar 4 and the south side of pillar 2 display a lion.
  - Both the south side of pillar 1 and the south side of pillar 2 display a falcon.
- If the south side of pillar 4 displays a falcon, which one of the following could be true?
  - The north side of pillar 1 displays a lion.
  - The south side of pillar 3 displays a falcon.
  - The north side of pillar 2 displays a falcon.
  - The south side of pillar 2 displays a lion.
  - The north side of pillar 4 displays a falcon.
- Each of the following could be true EXCEPT
  - The south sides of pillars 1 and 2 both display a lion.
  - The north sides of pillars 1 and 3 both display a lion.
  - The north sides of pillars 3 and 4 both display a lion.
  - The south sides of pillars 2 and 3 display a lion.
  - The south sides of pillars 3 and 4 display a lion.
- If the south side of pillar 1 displays a falcon, which one of the following must be true?
  - The south side of pillar 3 displays a falcon.
  - The north side of pillar 4 displays a lion.
  - The south side of pillar 3 displays a lion.
  - The north side of pillar 2 displays a falcon.
  - The south side of pillar 4 displays a falcon.
- If it is known that the south side of pillar 2 displays a falcon, then for how many of the pillars is it possible to deduce which engraving both sides display?
  - zero
  - one
  - two
  - three
  - four
- Of the eight sides of the pillars, what is the maximum number that could display lions?
  - four
  - five
  - six
  - seven
  - eight

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

This is an example of the rare "map" type of game. Usually games like this will involve rules requiring things next to each other to have a different quality; thus, inferences on games like this create a sort of "domino" effect. Make sure you understand that each pillar, while it must have at least one lion, need not have at least one falcon.

On Question 1, four of the answers break a rule. For instance, A and E break the second rule because they create the inference that two engravings of the same kind are facing each other. On question 2 you can deduce that the north side of pillar 4 must have a lion (since each pillar must have at least one lion) and therefore, the south side of pillar 2 has a falcon. Therefore, the north side of pillar 2 must have a lion (again since each pillar must have a lion); thus, the north side of pillar 3 has a falcon, likewise meaning the south side of pillar 3 has a lion as well as the south side of pillar 1. Only the north side of pillar 1 cannot be deduced, and is either a falcon or a lion.

On Question 3, the south sides of pillars 3 and 4 cannot both display falcons because it would mean their north sides would both display lions, meaning the south sides of 1 and 2 would display falcons, meaning that the north side of pillar 2 would display a lion, meaning the north side of pillar 3 could not display a lion (but in the answer, it does). Thus, choice C breaks a rule.

Question 4 involves the inference that if the south side of pillar 1 displays a falcon, the north side of both pillar 1 and pillar 3 must display a lion. This means the north side of pillar 2 must display a falcon, thus the south side of pillar 2 must display a lion. This in turn means that the north side of pillar 4 must display a falcon and the south side of that pillar must display a lion. These deductions exclude answers A through D.

On Question 5, you can deduce that the north side of pillar 2 contains a lion, and thus the north and south sides display a lion and a falcon, respectively. You can also deduce that the south side of pillar 1 and north side of pillar 1 display a lion (since they are across from falcons). However, you cannot deduce what is on the other side of these two pillars—the north side of pillar 1 and south side of pillar 2 could contain lions or falcons.

Question 6 is C—six faces—because of the rule about faces across from each other. Remember that, though a pillar can have two lions, the pillars facing each other must be different. Also note that such an arrangement must comport with the third rule. With the north faces of pillars 3 and 4 displaying falcons, the third rule is accommodated.