

## Game 9 – Zoo Animals

On Monday, a zookeeper will feed six different groups of animals—flamingos, marmosets, penguins, snakes, tortoises and wolverines. The groups of animals will be fed one at a time, and no group of animals will be fed twice. The following conditions govern the feeding of the animals:

The wolverines must be fed either first or last.

The flamingos are fed immediately after the tortoises are fed.

The tortoises are fed at some time after the marmosets are fed.

If the snakes are the third group of animals to be fed, the tortoises are the fifth group of animals to be fed.

- Which one of the following could be a list of the animals in the order they are fed on Monday, from 1 to 6?
  - snakes, marmosets, tortoises, penguins, flamingos, wolverines
  - snakes, marmosets, tortoises, flamingos, wolverines, penguins
  - snakes, penguins, marmosets, tortoises, flamingos, wolverines
  - wolverines, tortoises, flamingos, penguins, marmosets, snakes
  - marmosets, penguins, snakes, tortoises, flamingos, wolverines
- Which CANNOT be the fifth group of animals to be fed on Monday?
  - The snakes
  - The marmosets
  - The tortoises
  - The penguins
  - The flamingos
- Which one of the following must be false?
  - The flamingos are the second group of animals to be fed on Monday.
  - The tortoises are the third group of animals to be fed on Monday.
  - The marmosets are the fourth group of animals to be fed on Monday.
  - The snakes are the fourth group of animals to be fed on Monday.
  - The penguins are the sixth group of animals to be fed on Monday.
- Which of the following is a pair of animals who could be fed third and fifth, respectively, on Monday?
  - the penguins and the snakes
  - the snakes and the penguins
  - the snakes and the flamingos
  - the flamingos and the penguins
  - the flamingos and the marmosets
- If, on Monday, the number of animals fed in between the feeding of the penguins and the snakes, not necessarily in that order, is as large as possible, which one of the following is a complete and accurate list of the animals which could be fed first?
  - snakes, penguins
  - wolverines, marmosets
  - snakes, penguins, marmosets
  - wolverines, snakes, penguins
  - wolverines, snakes, penguins, marmosets
- If on Monday the wolverines are fed immediately after the flamingos, which one of the following must be true?
  - Either the snakes or the marmosets are fed first.
  - Either the snakes or the penguins are fed first.
  - Either the snakes or the marmosets are fed second.
  - Either the penguins or the snakes are fed third.
  - Either the penguins or the marmosets are fed third.
- If, on Monday, the tortoises are fed immediately after the snakes, then which one of the following could be true?
  - The marmosets are fed second.
  - The flamingos are fed third.
  - The tortoises are fed fourth.
  - The snakes are fed fifth.
  - The penguins are fed sixth.

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

This is a "tight" game where space and "having enough room" is very important. Hopefully you started thinking about how the placement of one element pushed the other ones around.

Question 1 is your typical rule testing question—each of the four rules is broken by a different answer choice. On Question 2, the marmosets cannot be fed fifth because they are fed before the tortoises, which are fed immediately before the flamingos. This is also how you get to the answer to Question 3—the flamingos can't be fed second because both the marmosets and the tortoises must be fed before them.

On Question 4, we know if the snakes are fed third, the tortoises are fed fifth, so this excludes B and C. Likewise, if the penguins are fed third and the snakes are fed fifth, this leaves no room for the tortoises to be immediately next to the flamingos, since they have to be fed after the marmosets (which is also why E is wrong).

Question 5 is a little bit intuitive—you have to figure out that since wolverines are first or last, you can't have penguins or snakes in first or sixth. Therefore, they have to be in second and sixth or first and fifth. There are no rules restricting which animal between snakes and penguins must go first, nor whether they must go second and sixth with wolverines in first or first and fifth themselves. Thus, the answer is D.

On Question 6, you can deduce that tortoises are fourth, and that snakes are not third—since if snakes were third, tortoises would be fifth (but they are not). This means that either the marmosets or the penguins are fed third.

Finally, on question 7, it's matter of excluding the answers. B is wrong—there is no room for the marmosets. C is wrong because it breaks the rule of snakes in third mandating tortoises in fifth. D doesn't leave enough room for the flamingos, and E leads to the deduction that the wolverines are in first, putting the marmosets in second and the snakes in third—which again breaks the snakes and tortoises rule.