

## Game 2 – Rodeo Bulls

At a rodeo, exactly seven bulls—F, G, J, L, M, N and O—will be ranked by how hard they buck. There are no ties. The ranking of the bulls conforms to the following conditions:

M does not buck as hard as J, which does not buck as hard as N.

O does not buck as hard as L, which bucks harder than F.

M does not buck as hard as O.

G bucks harder than at least one bull.

1. Which one of the following could be a complete and accurate ranking of the bulls, from the bull that bucks the hardest to the bull that bucks the least hard?

- A. N, L, O, J, F, G, M
- B. G, N, J, F, O, L, M
- C. N, F, J, L, O, G, M
- D. L, N, J, M, F, G, O
- E. N, L, O, M, G, J, F

2. Which one of the following must be true?

- A. Either M or F is the lowest ranked bull.
- B. Either F or O is the lowest ranked bull.
- C. Either F or G is the second-lowest ranked bull.
- D. Either F or O is the second-lowest ranked bull.
- E. Either O or J is the second-lowest ranked bull.

3. How many different bulls could be ranked as bucking the hardest?

- A. one
- B. two
- C. three
- D. four
- E. five

4. If J bucks harder than G but not as hard as F, which one of the following must be true?

- A. N bucks harder than F.
- B. G bucks harder than M.
- C. O bucks harder than F.
- D. N bucks harder than O.
- E. O bucks harder than G.

5. Each one of the following could be true EXCEPT

- A. F bucks harder than G, but not as hard as M.
- B. J bucks harder than F, but not as hard as O.
- C. N bucks harder than G, but not as hard as L.
- D. M bucks harder than F, but not as hard as O.
- E. O bucks harder than N, but not as hard as G.

6. If N is ranked immediately behind F, and L is not the highest ranked bull, then how many different arrangements could be a complete and accurate list of the three highest ranked bulls?

- A. one
- B. two
- C. three
- D. four
- E. five

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

Question 1, like most first questions of a game, tests the rules, and answers B through E each break a rule. In Question 2, every other bull must be in front of another bull, or, in the case of G, cannot be last. Question 3 is based on the deduction that N, L and G are the only bulls that are not required to be behind another bull under the rules.

In Question 4, G can't be last, so it must come ahead of M, since it would be the only thing behind M, since F is in front of M. Question 5 is A because this would put G in last place. On Question 6, you can deduce that either G, L and F or G, L and O must be the first three bulls because the N and F fact places the other bulls behind these clusters.