

## Game 11 – Fruits & Vegetables

Three types of fruits—pineapples, grapefruit and mangoes—as well as four types of vegetables—onions, turnips, radishes and zucchini—will be stored in three different barrels, numbered 1 to 3. The storage of the produce must conform to the following conditions:

No more than one type of fruit is stored in a given barrel.

Onions are stored in the same barrel as radishes.

Turnips are stored in a different barrel from onions

If zucchini is stored with mangoes, radishes are stored with pineapples.

1. Which one of the following could be a complete and accurate list of the produce stored in barrel 2?

- A. grapefruit, onions, radishes, pineapples
- B. mangoes, onion, radishes, zucchini
- C. pineapples, turnips
- D. mangoes, onions, zucchini
- E. onions, radishes

2. Each of the following is two types of produce that could be in the same barrel EXCEPT

- A. zucchini and radishes
- B. radishes and turnips
- C. mangoes and onions
- D. pineapple and turnips
- E. grapefruit and radishes

3. If turnips are the only vegetable in the same barrel as pineapples, which one of the following must be true?

- A. Zucchini are in the same barrel as grapefruit.
- B. Radishes are in the same barrel as mangoes.
- C. Onions are in the same barrel as grapefruit.
- D. Onions are in the same barrel as zucchini.
- E. Radishes are in the same barrel as grapefruit.

4. Which one of the following CANNOT be true?

- A. Turnips are in a different barrel from both radishes and zucchini.
- B. Radishes are in a different barrel from both mangoes and grapefruit.
- C. Grapefruit are in a barrel with exactly three types of vegetable.
- D. Pineapples are in a barrel with exactly three types of vegetable.
- E. Mangoes are in a barrel with exactly three types of vegetable.

5. If the only vegetable in barrel 2 is zucchini, barrel 3 must contain either

- A. pineapples or grapefruit
- B. turnips or radishes
- C. grapefruit or radishes
- D. turnips or pineapples
- E. onions or mangoes

6. If the barrel with the grapefruit contains exactly two types of vegetable and the other two barrels each contain exactly one type of vegetable, then each of the following pairs of fruits and vegetables must be stored in the same barrel EXCEPT

- A. zucchini and pineapple
- B. turnips and pineapple
- C. turnips and mangoes
- D. radishes and grapefruit
- E. onions and grapefruit

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

This is a good example of a game where you seldom know the numbers of the groups, but rather, the elements that are in them. Hopefully you are figuring out that you need to plot out the three different fruits and which vegetables are with them, not the numbers of the groups, for most of these questions.

Question 1 tests the rules, and each of the wrong answers breaks a rule. Sometimes the breaking of the rule is by inference; for instance, E is wrong because one of the fruits must be there. On Question 2, radishes must be with onions, but onions cannot be with turnips—making the arrangement in B impossible. On Question 3, you can deduce that, because radishes are not in the same barrel as pineapples, zucchini are not in the same barrel as mangoes, and thus they must be in the barrel with the grapefruit (since only turnips are with pineapple).

On Question 4, mangoes can't be in a barrel with three types of vegetable because of the zucchini and mangoes rule. The only group of three of vegetable possible is onions, radishes, and zucchini, since onions can't be with turnips (and thus neither can radishes). This cluster can exist in the barrel with the pineapple or the grapefruit, but not the mangoes because if zucchini are with mangoes, radishes are not.

For Question 5, the third barrel must contain either the onions and the radishes or the turnips, since these two things cannot be together, and cannot go in the second barrel. On Question 6, onions and radishes must be in the barrel with the grapefruit, meaning zucchini cannot be in a barrel with the mangoes based on the last rule. This means zucchini are with pineapple and turnips are with mangoes.