

- Q12.** There are two jugs; one is a 4-liter (4L) jug and the other is a 3-liter (3L) jug. Which of the following is the correct sequence to obtain exactly 2 liters of water in the 4L jug under the conditions shown below? Here, (x, y) indicates that the 4L jug contains x liters of water and the 3L jug has y liters of water.

[Conditions]

You can use only the 3L and 4L jugs.

You are allowed to fill up or empty either jug.

You are allowed to pour water from one jug to the other.

The jugs have no scale marks.

There is an ample supply of water.

- a) $(0,0) \rightarrow (0,3) \rightarrow (3,0) \rightarrow (0,3) \rightarrow (4,2) \rightarrow (0,2) \rightarrow (2,0)$
- b) $(0,0) \rightarrow (0,3) \rightarrow (3,0) \rightarrow (3,3) \rightarrow (4,2) \rightarrow (0,2) \rightarrow (2,0)$
- c) $(0,0) \rightarrow (0,3) \rightarrow (3,3) \rightarrow (3,0) \rightarrow (4,2) \rightarrow (0,2) \rightarrow (2,0)$
- d) $(0,0) \rightarrow (3,0) \rightarrow (0,3) \rightarrow (3,3) \rightarrow (0,2) \rightarrow (4,2) \rightarrow (2,0)$