Do You Know?
Set 2

1. What is the role of the instance variable sideLength?
Store the side length of the box.

2. What is the role of the instance variable steps?
Remember how many steps has the bug runned on this side.

3. Why is the turn method called twice when steps becomes equal to sideLength?
Because if we want the bug to move in a square, it should turn 90 degrees whenever it finishs an edge.

4. Why can the move method be called in the BoxBug class when there is no move method in the BoxBug code?
The move method is inherited from the Bug Class.

5. After a BoxBug is constructed, will the size of its square pattern always be the same? Why or why not?
Yes. Because the sidelength is stored in a private member variable and there is no method to access it.

6. Can the path a BoxBug travels ever change? Why or why not?
Yes. If the bug encounters an edge before it reaches the boundary of the box, it turns immediately and the position of the box changes.

7. When will the value of steps be zero?
When the bug is constructed, or when it encounters an edge or reaches the boundary of the box.

Exercises

1. Write a class CircleBug that is identical to BoxBug, except that in the act method the turn method is called once instead of twice. How is its behavior different from a BoxBug?
It tends to move in a path of right octagon.

5. Study the code for the BoxBugRunner class. Summarize the steps you would use to add another BoxBug actor to the grid.
First, create a BoxBug object using the keyword new. Then call the add method
of the world to add the bug to the grid.