Set 1
1. Does the bug always move to a new location? Explain.

   No.The bug only moves to a new location when the new location is empty or there is a flower in the new location.

2. In which direction does the bug move?

   Right.
3. What does the bug do if it does not move?

   It will turn right until it finds a new location to move.

4. What does a bug leave behind when it moves?

   It will leave a flower which has the same color as the bug does.

5. What happens when the bug is at an edge of the grid? (Consider whether the bug is facing the edge as well as whether the bug is facing some other direction when answering this question.)

   When the bug is facing with the edge, it will turn right to find a new location to move; when the bug is not facing the edge, it will move if it can, or it will turn right.

6. What happens when a bug has a rock in the location immediately in front of it?

   It will turn right.
7. Does a flower move?

   No, it doesn't move.

8. What behavior does a flower have?

   When the game is not stopped, the color of a flower will turn darker and darker, until it is gray.

9. Does a rock move or have any other behavior?

A rock has no behavior.

10. Can more than one actor (bug, flower, rock) be in the same location in the grid at the same time?

No, there will be only one actor in the same location in the grid at the same time.

Exercises

1.

Degrees	Compass Direction
0	North
45	Northeast
90	East
135	Southeast
180	East
225	Southwest
270	West
315	Northwest
360	North

2. Move a bug to a different location using the moveTo method. In which directions can you move it? How far can you move it? What happens if you try to move the bug outside the grid?

  We can move a bug to any direction, but we can move a bug to a location which is within the grid. So the longest distance we can move a bug is the distance between the a bug and the edge. When we try to move a bug outside the grid, a dialog window will display that an exception(IllegalArgumentException) has been raised.

3. Change the color of a bug, a flower, and a rock. Which method did you use?

   setColor(java.awt.Color).
4. Move a rock on top of a bug and then move the rock again. What happened to the bug?

   When a rock is moved on top of a bug, the bug will be covered by the rock; when the rock is moved away, the bug disappears.