

AP CS A – Karel J Robot
Review Sheet Chapters 1-3

Name: _____

Date: _____ Per: _____

1. In the robot world –
 - a) streets run which directions?
 - b) avenues run which directions?
 - c) streets are numbered:
 - d) avenues are numbered:
 - e) the three objects which can be placed are

2. What instruction gives a robot the ability to
 - a) change his location
 - b) rotate 90° counter-clockwise
 - c) capture a beeper
 - d) deposit a beeper

3. What effect do the following instructions have?
 - a) move
 - b) turnLeft
 - c) pickBeeper
 - d) putBeeper
 - e) turnOff

4. What use do the following have in the Java programming language
 - a) { }
 - b) extends
 - c) void
 - d) public (used in front of method headings)
 - e) super (as used in the constructor)

5. Explain “error shutoff” – its causes and effects

6. Explain the following errors and their effect on execution:
 - a) lexical
 - b) syntax
 - c) intent
 - d) execution

7. Explain “stepwise refinement”.

8. Relate the following terms to each other using complete sentences (it will take you about a paragraph of ten sentences or so for a good explanation): **'class', 'superclass', 'subclass', 'extends', 'inherits', 'is-A', 'encapsulation', and 'abstraction'**. In your description, you are also defining/making clear what these terms mean/are – do not be general – use examples to help explain.

Programming:

1. Completely define a new class called `Review` which can perform the following:
 - move
 - turnLeft
 - jumpAndSpin (move one block forward and then face the opposite direction)
 - turnOff
 - moveFourAndDrop (move forward 4 blocks and then drop a beeper)
 - putBeeper
 - pickBeeper
 - turnAround (180°)

While writing this class, you should take advantage of any classes we've written in class.

2. Write a complete client program which will create a robot at the origin facing south with 2 beepers. The robot should then proceed to 5th street and 1st avenue to drop a beeper; then it should proceed to 2nd street and 1st avenue and deposit the last beeper. The robot should end up at the origin facing north. Try to use the least number of statements possible and you must use the `Review` class above (assume it works regardless of what you wrote above).

```
public class Sample implements Directions
{
    public static void main(String[] args) {
        // your client code goes here...

    }

    static {
        // don't worry about this code
    }
}
```