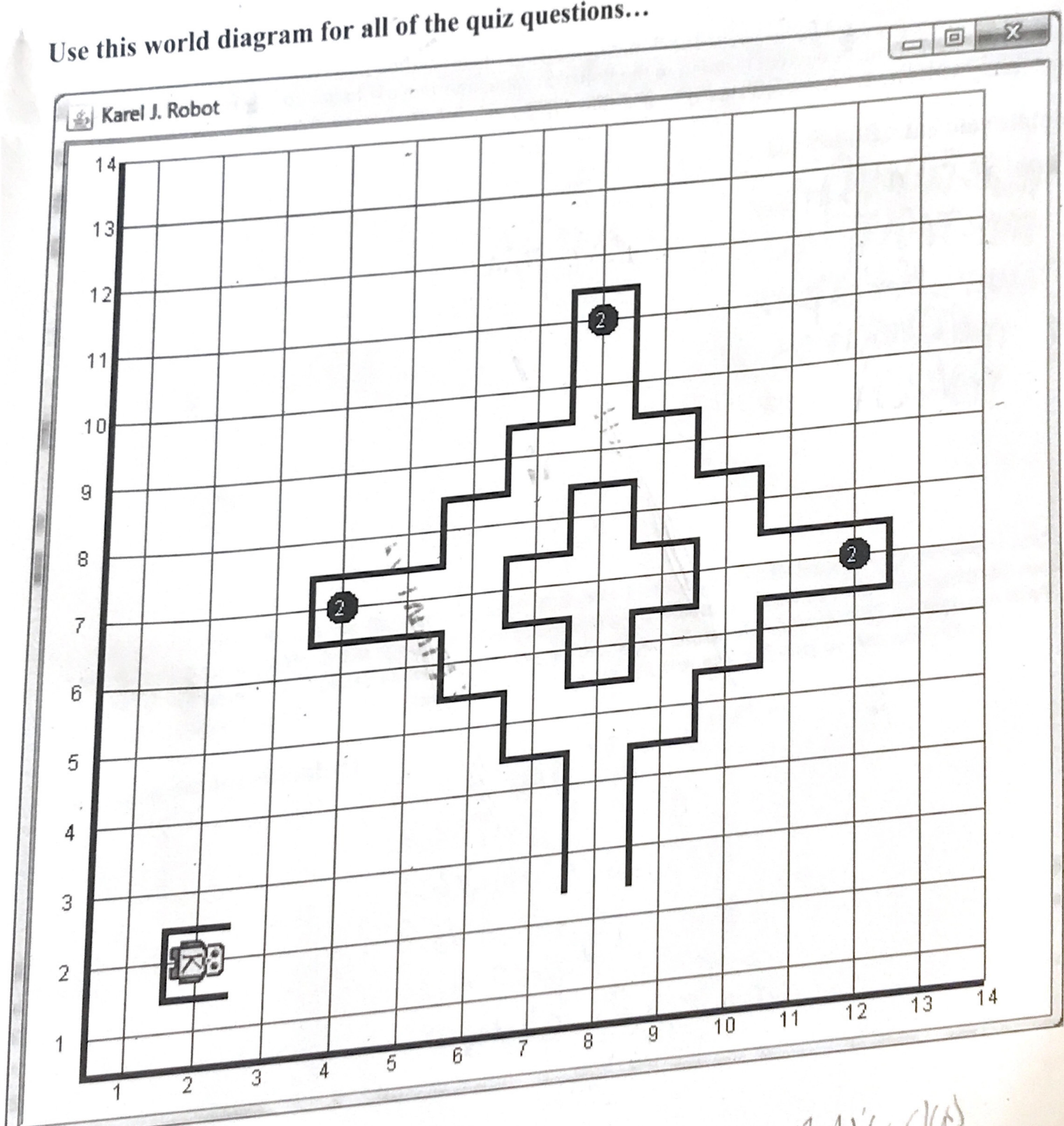




Name: _____
Period: _____

AP Java Quiz 01 Review Practice, 20pts (Karel Robot and Basic Java)

Use this world diagram for all of the quiz questions...



public class
BombSQUIDRobot extends
VRRobot

Introduction: Karel is now working for the Bomb Squad at the Orange County Sheriff's Department. Karel *IS* a **BombSquadRobot** Object. There are two files in this simulation, **BombSquadRobotTester.java** and **BombSquadRobot.java**. In the previous diagram, Karel is on a training mission to clear the 6 bombs found in the practice building. Beside inherited UrRobot methods like **move()**, **turnLeft()**, and **pickBeeper()**, you also have special **BombSquadRobot** methods such as **turnRight()**, **turnAround()**, **moveTwo()**, and **moveFour()** which save time by turning right, turning around, moving two spaces, and moving four spaces. You are required to use these methods **whenever possible** to shorten code as much possible. Karel must **ALWAYS** move clockwise through the building to collect the bombs. Only use methods listed in this box to complete the code questions.

- (01) In the space provided below, write the **BombSquadRobot.java** method **enterBuilding()**. This method would take Karel from its current location in the Police Station, and move it to location Street 5, Avenue 8 and facing NORTH. Do this as efficiently as possible. (3pts.)

```
public void enterBuilding()
{
    moveFour();
    moveTwo();
    turnLeft();
    moveTwo();
    move();
}
```

(02) In the space provided, write the BombSquadRobot.java method `moveToNextRoom`. This method will take Karel and move it to the doorway of the next room (ex: from Street 5, Avenue 8 to Street 7, Avenue 6). When finished, Karel MUST be facing AWAY (in the opposite direction) from the bombs. Do this as efficiently as possible. (3pts.)

```
public void moveToNextRoom()
{
    ...
}
```

turn left()
move()
turn right()
move()
turn left()
move()
turn right()
move()
turn right()

m0
turnLeft();
move();
turnRight();
move();
turnLeft();
move();
turnRight();
move();
turnRight();

turnLeft();
move();
turnRight();
move();
turnLeft();
move();
turnRight();
move();
turnRight();

}

}
(03) In the space provided, write the BombSquadRobot.java method removeBombs(). This method would
start with Karel facing AWAY (in the opposite direction) from the bombs. Karel would then enter the room,
collect the TWO bombs, and finish exactly where it started. When finished, Karel MUST be facing AWAY
(in the opposite direction) from where the TWO bombs were. Do this as efficiently as possible. (3pts.)

```
public void removeBombs()
```

{ turn A town();
moveTwob(),
pick Berry();
pick Berry();
turn A town();
moveTwob();

turn Around();
moveTwo();
pickBeefur();
pickBear();
turn Around();
moveTwo();

would take Karel from Street 5, Avenue 8 and return Karel to the police station box. When finished, Karel MUST be facing East and inside the box, as it started originally. Do this as efficiently as possible. (3pts.)

```
public void returnToPoliceStation()
{
    turn Around();
    move To(0);
    turn Right();
    turn Around();
    move To(0);
    turn Left();
}
```

turn around();
moveTwo();
move();
turnRight();
moveFront();
moveTwo();
turn Around();

- (05) In the space provided, complete the main method of the BombSquadRobotTester.java file. You should provide all missing code that would allow Karel to complete the entire process as described previously, from leaving the police station, to moving into each room, to clearing the rooms of bombs, to returning back to the police station. Do this as efficiently as possible. (8pts.)

```
public static void main(String[] args)
{
    .
    .
}
```

```
//load world window, no code needed here
World.reset();
World.readWorld("Karel_Quiz01.kwld");      //load world map
World.setVisible(true);                     //show map
World.setDelay(1);                          //hundredths of seconds
```

```
//declare and initialize a BombSquadRobot named Karel on one line of code here
```

BombSquad Robot Kure) [New BombSquad(2,2,Fast,2)]

//only use methods that YOU WROTE above to complete this process here

Konel center Building();
Konel. moveTo Next Room();
Kurel. remove Bombs();
Kurel. moveTo Next Room();
Kurel. return to Police Station();
no code needed here

Karel. enterBuilding();
Karel. moveToNextRoom();
Karel. removeBombs();
Karel. moveToNextRoom();
Karel. removeBombs();
Karel. moveToNextRoom();
Karel. removeBombs();
Karel. moveToNextRoom();
Karel. removeBombs();

//no code needed here

}

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