

Assignment -1

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CONCLUSION

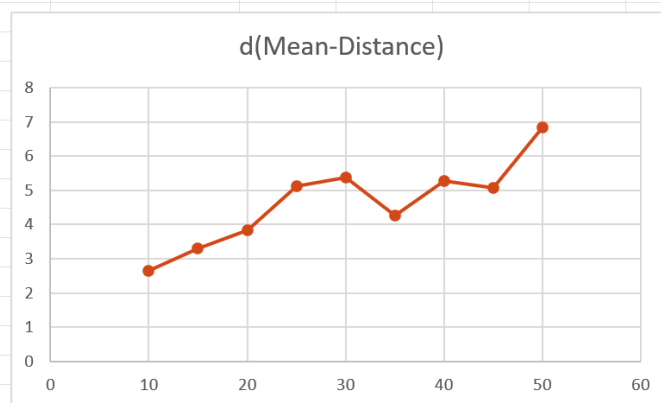
The number of random steps taken by a drunk man is related to the distance travelled.

Through experimentation, it was discovered that the average distance squared is equal to the number of steps taken.

By taking the square root of the number of steps, the distance travelled can be determined. Despite the steps being randomly generated, this correlation between distance and steps remains consistent.

EVIDENCE

m(steps)	d(Mean-Distance)
10	2.641256363
15	3.314151418
20	3.8262
25	5.12496
30	5.387001132
35	4.274392064
40	5.283004547
45	5.0648
50	6.837677199



CODE

```
private void move(int dx, int dy) {  
    // FIXME do move by replacing the following code  
    x += dx;  
    y += dy;  
}  
  
private void randomWalk(int m) {  
    // FIXME
```

```
// END

    for (int i = 0; i < m; i++){
        randomMove();
    }
}

public double distance() {
    // FIXME by replacing the following code
    return Math.sqrt(Math.pow(x, 2) + Math.pow(y, 2));
}
```

TEST CASE

