

```

1 /Users/Aashay/Library/Java/JavaVirtualMachines/
  openjdk-19.0.2/Contents/Home/bin/java -javaagent:/
  Applications/IntelliJ IDEA CE.app/Contents/lib/
  idea_rt.jar=51303:/Applications/IntelliJ IDEA CE.
  app/Contents/bin -Dfile.encoding=UTF-8 -Dsun.stdout
  .encoding=UTF-8 -Dsun.stderr.encoding=UTF-8 -
  classpath /Users/Aashay/Desktop/Spring2023/PSA/
  INF06205/target/classes:/Users/Aashay/.m2/
  repository/com/phasmidsoftware/args_2.13/1.0.3/
  args_2.13-1.0.3.jar:/Users/Aashay/.m2/repository/
  org/scala-lang/scala-library/2.13.7/scala-library-2
  .13.7.jar:/Users/Aashay/.m2/repository/org/scala-
  lang/modules/scala-parser-combinators_2.13/1.1.2/
  scala-parser-combinators_2.13-1.1.2.jar:/Users/
  Aashay/.m2/repository/org/apache/logging/log4j/
  log4j-api/2.19.0/log4j-api-2.19.0.jar:/Users/Aashay
  /.m2/repository/log4j/log4j/1.2.17/log4j-1.2.17.jar
  :/Users/Aashay/.m2/repository/com/google/guava/
  guava/31.1-jre/guava-31.1-jre.jar:/Users/Aashay/.m2
  /repository/com/google/guava/failureaccess/1.0.1/
  failureaccess-1.0.1.jar:/Users/Aashay/.m2/
  repository/com/google/guava/listenablefuture/9999.0
  -empty-to-avoid-conflict-with-guava/
  listenablefuture-9999.0-empty-to-avoid-conflict-
  with-guava.jar:/Users/Aashay/.m2/repository/com/
  google/code/findbugs/jsr305/3.0.2/jsr305-3.0.2.jar
  :/Users/Aashay/.m2/repository/org/checkerframework/
  checker-qual/3.12.0/checker-qual-3.12.0.jar:/Users/
  Aashay/.m2/repository/com/google/errorprone/
  error_prone_annotations/2.11.0/
  error_prone_annotations-2.11.0.jar:/Users/Aashay/.
  m2/repository/com/google/j2objc/j2objc-annotations/
  1.3/j2objc-annotations-1.3.jar:/Users/Aashay/.m2/
  repository/org/ini4j/ini4j/0.5.4/ini4j-0.5.4.jar
  edu.neu.coe.info6205.randomwalk.RandomWalk
2 For n = 5
3
4 5 steps: 2.1693676193089755 over 30 experiments
5 5 steps: 2.374516552471592 over 30 experiments
6 5 steps: 1.9798740876016518 over 30 experiments
7 5 steps: 2.076248017215535 over 30 experiments

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8 5 steps: 2.3519500096072643 over 30 experiments
9
10 Average = 2.1903912572410036
11 Square Root = 2.23606797749979
12
13
14 For n = 10
15
16 10 steps: 3.09856772212595 over 30 experiments
17 10 steps: 3.1396724056398004 over 30 experiments
18 10 steps: 2.9012117692063994 over 30 experiments
19 10 steps: 2.7572066758819944 over 30 experiments
20 10 steps: 2.617727610846885 over 30 experiments
21
22 Average = 2.902877236740206
23 Square Root = 3.1622776601683795
24
25
26 For n = 15
27
28 15 steps: 3.995793412864727 over 30 experiments
29 15 steps: 3.012100040961472 over 30 experiments
30 15 steps: 3.5926562900852677 over 30 experiments
31 15 steps: 3.157896240695593 over 30 experiments
32 15 steps: 3.3031354366070365 over 30 experiments
33
34 Average = 3.412316284242819
35 Square Root = 3.872983346207417
36
37
38 For n = 20
39
40 20 steps: 3.7548623403293586 over 30 experiments
41 20 steps: 4.051366381504491 over 30 experiments
42 20 steps: 4.91056970552164 over 30 experiments
43 20 steps: 4.026106202681609 over 30 experiments
44 20 steps: 4.638553626200877 over 30 experiments
45
46 Average = 4.276291651247595
47 Square Root = 4.47213595499958
48
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49
50 For n = 25
51
52 25 steps: 4.504435965965718 over 30 experiments
53 25 steps: 4.038774687474506 over 30 experiments
54 25 steps: 4.360099179774845 over 30 experiments
55 25 steps: 5.52851274531724 over 30 experiments
56 25 steps: 4.195064215794727 over 30 experiments
57
58 Average = 4.525377358865407
59 Square Root = 5.0
60
61
62 For n = 30
63
64 30 steps: 4.865351537384699 over 30 experiments
65 30 steps: 4.955537053558721 over 30 experiments
66 30 steps: 5.289233790837266 over 30 experiments
67 30 steps: 4.16836986957131 over 30 experiments
68 30 steps: 5.004177240022754 over 30 experiments
69
70 Average = 4.856533898274949
71 Square Root = 5.477225575051661
72
73
74 For n = 35
75
76 35 steps: 4.73851831756357 over 30 experiments
77 35 steps: 5.9932534324623665 over 30 experiments
78 35 steps: 4.971272749820508 over 30 experiments
79 35 steps: 4.90114966323136 over 30 experiments
80 35 steps: 5.474123958906519 over 30 experiments
81
82 Average = 5.215663624396865
83 Square Root = 5.916079783099616
84
85
86 For n = 40
87
88 40 steps: 5.5919462131402815 over 30 experiments
89 40 steps: 5.532021649280471 over 30 experiments
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90 40 steps: 5.26872279376991 over 30 experiments
91 40 steps: 5.4988610683336825 over 30 experiments
92 40 steps: 5.765577598915689 over 30 experiments
93
94 Average = 5.531425864688006
95 Square Root = 6.324555320336759
96
97
98 For n = 45
99
100 45 steps: 6.822376558161172 over 30 experiments
101 45 steps: 5.708495501643459 over 30 experiments
102 45 steps: 6.133670163458572 over 30 experiments
103 45 steps: 6.734530993445866 over 30 experiments
104 45 steps: 4.935814010734462 over 30 experiments
105
106 Average = 6.066977445488706
107 Square Root = 6.708203932499369
108
109
110 For n = 50
111
112 50 steps: 6.327923081020864 over 30 experiments
113 50 steps: 7.555404756787476 over 30 experiments
114 50 steps: 6.170353236697803 over 30 experiments
115 50 steps: 6.550228182969248 over 30 experiments
116 50 steps: 6.434854416199286 over 30 experiments
117
118 Average = 6.607752734734936
119 Square Root = 7.0710678118654755
120
121
122
123 Process finished with exit code 0
124
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