Knuth Experiments

Test 1

Number: 1

Algorithm: BFS

Output

```
Enter the number you want to reach:1

Please insert the algorithm you want to try [bfs/ids]:bfs

Solution:
root
root
floor

Total Steps: 13
Time Spent: 0.002000s
Process finished with exit code 0
```

Test 2

Number: 1

Algorithm: IDS

Output

```
Enter the number you want to reach:1

Please insert the algorithm you want to try [bfs/ids]:ids


Solution:

root
root
floor

Total Steps: 13
Time Spent: 0.002000s
Process finished with exit code 0
```

Test 3

Number: 2

Algorithm: BFS

Output

```
Enter the number you want to reach:2

Please insert the algorithm you want to try [bfs/ids]:bfs


Solution:

root

Total Steps: 2
Time Spent: 0.003000s
Process finished with exit code 0
```

Test 4

Number: 2

Algorithm: IDS

Output

```
Enter the number you want to reach:2

Please insert the algorithm you want to try [bfs/ids]:ids


Solution:

root

Total Steps: 1
Time Spent: 0.001000s
Process finished with exit code 0
```

Test 5

Number: 3

Algorithm: BFS

Output

```
Enter the number you want to reach:3

Please insert the algorithm you want to try [bfs/ids]:bfs


Solution:

factorial
factorial
root
root
root
root
root
floor
factorial
root
root
floor

Total Steps: 1771
Time Spent: 2.980000s
Process finished with exit code 0
```

Test 6

Number: 3

Algorithm: IDS

Output

```
Enter the number you want to reach:3

Please insert the algorithm you want to try [bfs/ids]:ids


Solution:

factorial
factorial
root
root
root
root
root
```

```
floor
factorial
root
root
floor


Total Steps: 460
Time Spent: 0.038000s
Process finished with exit code 0
```

Test 7

Number: 4

Algorithm: BFS

Output

```
Enter the number you want to reach:4

Please insert the algorithm you want to try [bfs/ids]:bfs


Solution:


Total Steps: 0
Time Spent: 0.001000s
Process finished with exit code 0
```

Test 8

Number: 4

Algorithm: IDS

Output

```
Enter the number you want to reach:4

Please insert the algorithm you want to try [bfs/ids]:ids


Solution:


Total Steps: 0
```

```
Time Spent: 0.001000s
Process finished with exit code 0
```

Test 9

Number: 5

Algorithm: BFS

Output

```
Enter the number you want to reach:5

Please insert the algorithm you want to try [bfs/ids]:bfs


Solution:

factorial
factorial
root
root
root
root
root
floor

Total Steps: 131
Time Spent: 0.032000s
Process finished with exit code 0
```

Test 10

Number: 5

Algorithm: IDS

Output

```
Enter the number you want to reach:5

Please insert the algorithm you want to try [bfs/ids]:ids


Solution:

factorial
```

```
factorial
root
root
root
root
root
floor


Total Steps: 94
Time Spent: 0.014000s
Process finished with exit code 0
```

Test 11

Number: 6

Algorithm: BFS

Output

```
Enter the number you want to reach:6

Please insert the algorithm you want to try [bfs/ids]:bfs


Solution:

factorial
factorial
root
root
root
root
root
floor
factorial
root
root
floor
factorial

Total Steps: 3329
Time Spent: 10.750000s
Process finished with exit code 0
```

Test 12

Number: 6

Algorithm: IDS

Output

```
Please insert the algorithm you want to try [bfs/ids]:ids


Solution:

factorial
factorial
root
root
root
root
root
floor
factorial
root
root
floor
factorial

Total Steps: 659
Time Spent: 0.447000s
Process finished with exit code 0
```

Test 13

Number: 7

Algorithm: BFS

Output

```
Enter the number you want to reach:7

Please insert the algorithm you want to try [bfs/ids]:bfs

Calculation takes too long!
 The program will stop now...
Process finished with exit code 1
```

Test 14

Number: 7

Algorithm: IDS

Output

```
Enter the number you want to reach:7

Please insert the algorithm you want to try [bfs/ids]:ids


Solution:

factorial
factorial
root
root
root
root
root
floor
factorial
root
root
floor
factorial
factorial
root
floor
factorial
root
root
root
root
floor
factorial
root
root
root
root
root
root
floor

Total Steps: 170234
Time Spent: 100.792999s
Process finished with exit code 0
```

Test 15

Number: 8

Algorithm: BFS

Output

```
Enter the number you want to reach:8

Please insert the algorithm you want to try [bfs/ids]:bfs

Calculation takes too long!
 The program will stop now...
Process finished with exit code 1
```

Test 16

Number: 8

Algorithm: IDS

Output

```
Enter the number you want to reach:8

Please insert the algorithm you want to try [bfs/ids]:ids


Solution:

factorial
factorial
root
root
root
root
root
floor
factorial
factorial
root
root
root
root
root
root
root
floor
factorial
root
root
root
root
root
floor
factorial
```

```
root
root
root
root
floor

Total Steps: 230159
Time Spent: 125.164001s
Process finished with exit code 0
```

Test 17

Number: 9

Algorithm: BFS

Output

```
Enter the number you want to reach:9

Please insert the algorithm you want to try [bfs/ids]:bfs

Calculation takes too long!
 The program will stop now...
Process finished with exit code 1
```

Test 18

Number: 9

Algorithm: IDS

Output

```
Enter the number you want to reach:9

Please insert the algorithm you want to try [bfs/ids]:ids

Calculation takes too long!
 The program will stop now...
Process finished with exit code 1
```

Test 19

Number: 10

Algorithm: BFS

Output

```
Enter the number you want to reach:10

Please insert the algorithm you want to try [bfs/ids]:bfs


Solution:

factorial
factorial
root
root
root
root
root
floor
factorial
root
floor

Total Steps: 943
Time Spent: 0.483000s
Process finished with exit code 0
```

Test 20

Number: 10

Algorithm: IDS

Output

```
Enter the number you want to reach:10

Please insert the algorithm you want to try [bfs/ids]:ids


Solution:

factorial
factorial
root
root
root
root
```

```
root
floor
factorial
root
floor

Total Steps: 315
Time Spent: 0.031000s
Process finished with exit code 0
```