Practical 3

Worksheet

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Q1: Every recursive algorithm has one or more base cases and recursive cases.

Q2: Recursion is theoretically powerful and often used in algorithms that could benefit from recursive methods

Q3: True

Q4: False

Q5: False

Q6: False

Q7: True

Q8: The base case for this recursive function is an argument with the value zero.

Q9: Missing base case, no guarantee of convergence, excessive memory requirements, excessive re-computation.

Q10: Recursive leap of faith

Fibonacci:

2.

N no. of values	Iterative	Recursive
30	0.0	0.04
35	0.0	0.046
40	0.0	0.492
45	0.0	5.392

We can see from the table that the recursive function is much slower for larger values of N.

3.

Iterative time complexion: O(n)

Recursive time complexion: O(2^n) i.e. exponential