Assignment 1

Assignment Submission deadline 10/09/2021 before 9.00Am

Solve the following recurrence relations using Master's Theorem.

1. $T(n) = 3T\left(\frac{n}{2}\right) + n^2$
2. $T(n) = 7T\left(\frac{n}{2}\right) + n^2$
3. $T(n) = 4T\left(\frac{n}{2}\right) + n^2$
4. T(n) = 9T(n/3) + n
5. T(n) = T(2n/3) + 1
6. $\mathrm{T(n)} = 3\mathrm{T}(\mathrm{n}/4) + \mathrm{n}\log\mathrm{n}$
7. $\mathrm{T(n)} = 4\mathrm{T}(\mathrm{n}/2) + \mathrm{n}^2\lg\mathrm{n}$
8. T(n) = 4T(n/2) + log n
9. $\mathrm{T(n)} = 5\mathrm{T}(\mathrm{n}/2) + \mathrm{n}^2\lg\mathrm{n}$
10. T(n) = 2T(n/4) + c
11. T(n) = T(n/4) + log n
12. T(n) = 2T(n/4) + log n
13. T(n) = 3T(n/3) + n log n
14. $\mathrm{T(n)} = 2\mathrm{T}(\mathrm{n}/4) + \sqrt{\mathrm{n}}$
15. $\mathrm{T(n)} = 2\mathrm{T}(\mathrm{n}/4) + n^{0.51}$
16. T(n) = 16T(n/4) + n!
17. T(n) = 3T(n/2) + n
18. T(n) = 4T(n/2) + cn
19. T(n) = 3T(n/3) + n/2
20. T(n) = 4T(n/2) + n/ log n
21. T(n) = 7T(n/3) + n^2
22. T(n) = 8T(n/3) + 2^n
23. T(n) = 16T(n/4) + n