CSE 310 Recitation 3

Objectives:

1. Exercise on applying substitution or master theorem to give tight asymptotic bounds for recurrences.

Rules:

1. Except for diagrams, charts or tables, answers MUST be provided in typed form.
2. For grading purposes, do NOT just submit the answers, instead copy each question, and put your answer under it. Unreadable and unclear answers will be graded with 0 points.
3. Submit your recitation on Canvas as a single PDF file.
4. For each recitation, you have 2 attempts to submit, but we will ONLY grade your last submission! It's your own responsibility to make sure that you submit the correct file! We will not accept any submissions through email.
5. **Equipment defects and technological difficulties cannot become excuses for late submission. No late submissions will be accepted!**

Question

Solving the following recurrences. Clearly state which of the 3 methods we taught in class you used to solve them. If you use the master's method, indicate which case you applied with. (2 pts each)

1. $T(n) = T\left(\frac{n}{3}\right) + T\left(\frac{2n}{3}\right) + n$

2. $T(n) = 2T\left(\sqrt{n}\right) + lgn$

3. $T(n) = 7T\left(\frac{n}{3}\right) + n^2$

4. $T(n) = 2T\left(\frac{n}{4}\right) + 1$

5. $T(n) = 2T\left(\frac{n}{4}\right) + \sqrt{n}$