

**Note:** Bonus questions are entirely optional. They can get very challenging and/or fall outside the course curriculum. Interested individuals may attempt.

2. Solve the following recurrences **using Master Theorem** (indirectly):

(a)  $T(n) = T(n/3) + T(n/6) + 5n^{\sqrt{\log n}}$ .

(b)  $T(n) = 4T(\sqrt{n}) + 6 \log^2 n$ .