

Farewell “Attendance Quiz” for Dr. Z.’s June 30, 2026 DIMACS REU Lecture

NAME: (print!) _____

E-MAIL ADDRESS: (print!) _____

1. Draw a random (complete) binary tree with 7 leaves (and hence 6 internal vertices), Mark one of its leaves, thereby creating a leaf-marked binary tree. Then apply the Rémy mapping to it, outputting a pair [vertex-marked binary tree, member of $\{L, R\}$].

2. Draw a random (complete) binary tree with 11 vertices (6 of which are leaves, and 5 of which are internal vertices), Mark one of these vertices, and also pick a random member of $\{L, R\}$, hence getting a pair

$$[\text{vertex-marked binary tree}, a], a \in \{L, R\}.$$

Apply the reverse Rémy map and output a binary tree with 13 vertices where one of its 7 leaves is marked.