

(1) Prove that the set of functions of the form $f(x) = a_0 + a_1x + a_2x^2$ for $a_0, a_1, a_2 \in \mathbb{Q}$ is countable.

TURN OVER

(2) How many ways can you assign n grad students to 3 offices such that each office has assigned at least 2 students?