

- (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?