

Name (IN CAPITAL LETTERS!): TID:

CID: Personal tutor:

Question 1.

(a) Carefully state the principle of mathematical induction.

(b) Prove by induction that, for all $n \in \mathbb{N}$, $1^2 + 2^2 + \cdots + n^2 = \frac{n(n+1)(2n+1)}{6}$.