第一次作业

请于**九月二十四日周二（校历第三周）**当堂上交本次作业。只收纸质版。晚交不收。可以与班上同学讨论合作，请参与合作的同学共同交一份作业，并署上所有参与者姓名。

1. Let f be a real-valued continuous function defined on the interval $[0,1]$. Let $B_n(f)$ be the polynomial on $[0,1]$ that assigns to x the value

$$\sum_{k=0}^{n} \binom{n}{k} x^k (1-x)^{n-k} f\left(\frac{k}{n}\right).$$

   Then $B_n(f)$ tends uniformly to f as $n \to \infty$. If f is continuously differentiable on $[0,1]$, then $B_n'(f)$ tends to f' uniformly as $n \to \infty$.