

Excellent work!

I have just two small remarks about 4. No need to revise. We can discuss this after class if what I wrote is not clear.



repetition

open



2

✓
✓ → not needed

✓

✓

✓

✓

✓

Nitpicking:

① You also have to remark that if $P_n \rightarrow f$ uniformly, $P_n f \rightarrow f^2$ uniformly!

② Also $f^2(x) \geq 0$ and f^2 is continuous implies $f^2(x) \neq 0$ for some x

$$\Rightarrow \int_0^1 f(x)^2 dx > 0!$$

consider



it is Riemann integrable
but $\int_0^1 f(x) dx = 0!$