This is a diagnostic quiz, which does not contribute to your final score in any way. As usual, I do expect you to solve some (in fact all) of them. Please write down your first and last names. Good Luck!

1. (5 mins)
   Let $f$ be a function from $[0, 1]$ to $\mathbb{R}$.
   Please write down the definition of $f$ is integrable.
   (Hint: You may use the upper sum $U(f, P)$ and lower sum $L(f, P)$ notations without defining them.)

2. (5 mins) Let $f$ be the function from $\mathbb{R}$ to $\mathbb{R}$ defined by

   $$f(x) = \sin^7(x).$$

   Please compute the integral

   $$\int_{-1}^{1} f(x) \, dx.$$