Brief solutions to selected problems in homework 05

1. Section 10.7: Solutions, common mistakes and corrections:

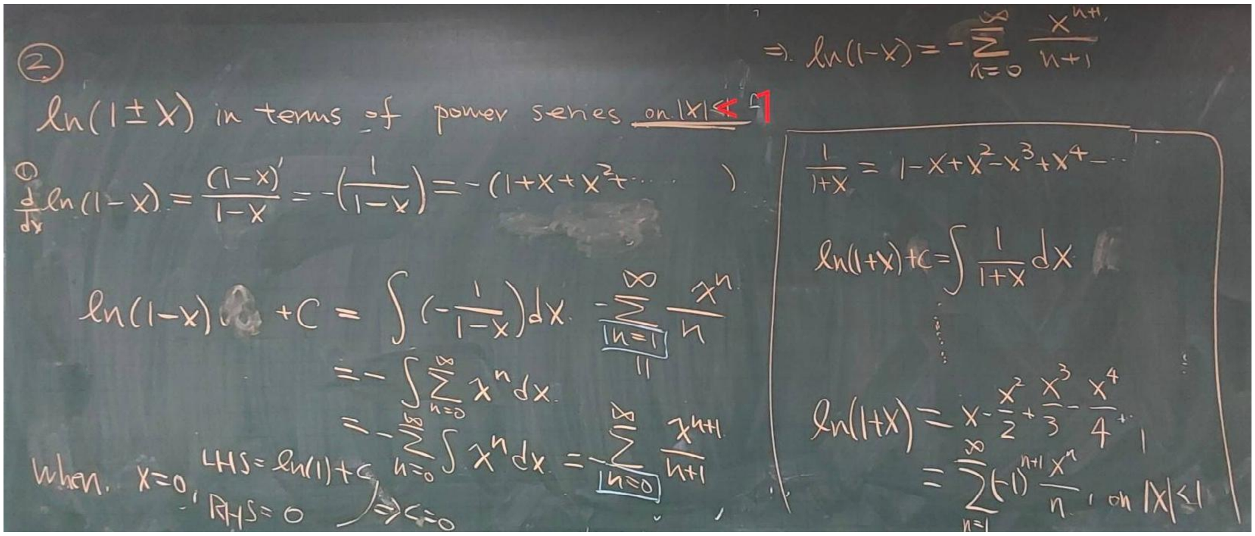

Figure 1: Solution to homework 05, problem 2

Remark: Alternatively, instead of using indefinite integral with an undetermined constant C, it is simpler to use definite integral with the center of the power series ("0") to be the lower limit of integration: $\ln(1+x) - \ln(1+0) = \int_0^x (1 - t + t^2 - \cdots)\, dt$.

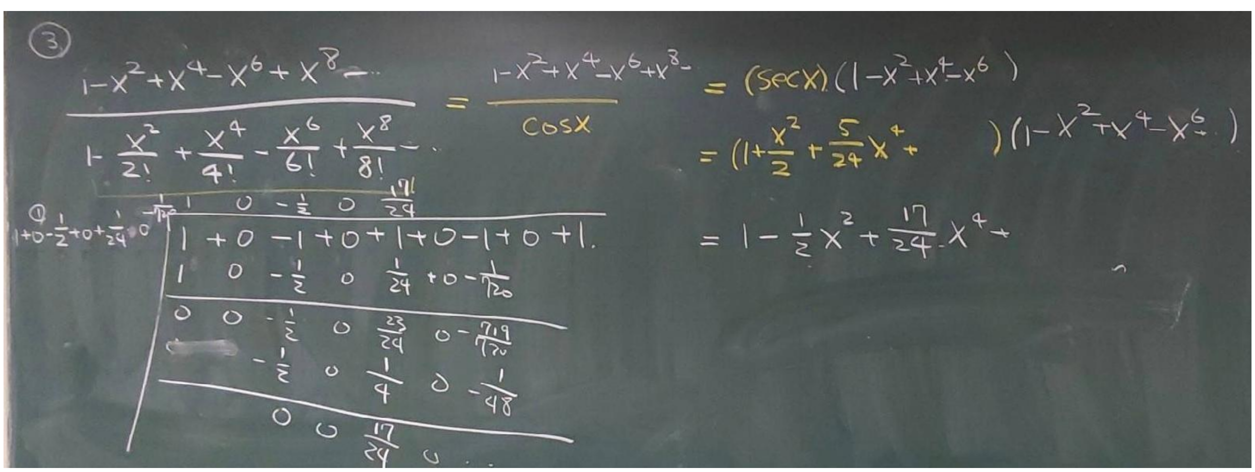

Figure 2: Solution to homework 05, problem 3

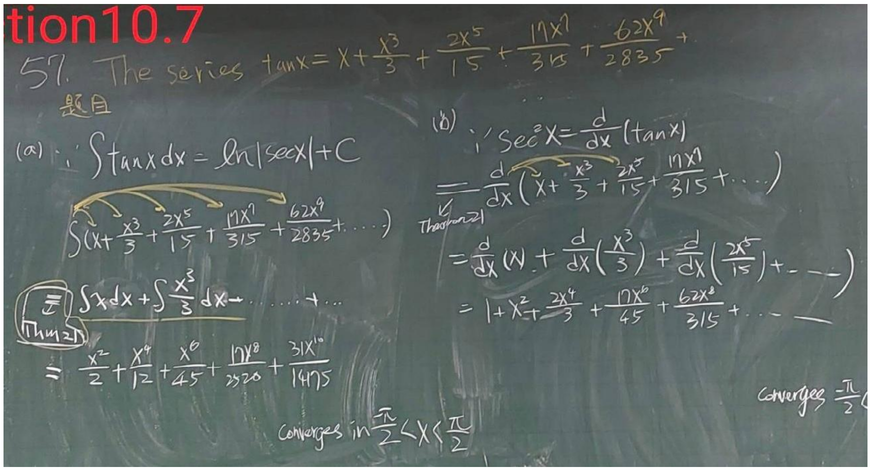

Figure 3: Solution to Section 10.7, problem 57

Alternatively, instead of using indefinite integral with an undetermined constant C, it is simpler to use definite integral with the center of the power series ("0") to be the lower limit of integration: $\ln|\sec x| - \ln|\sec 0| = \int_0^x \tan t \, dt = \int_0^x t + \frac{t^3}{3} + \frac{2t^5}{15} + \cdots \, dt$.

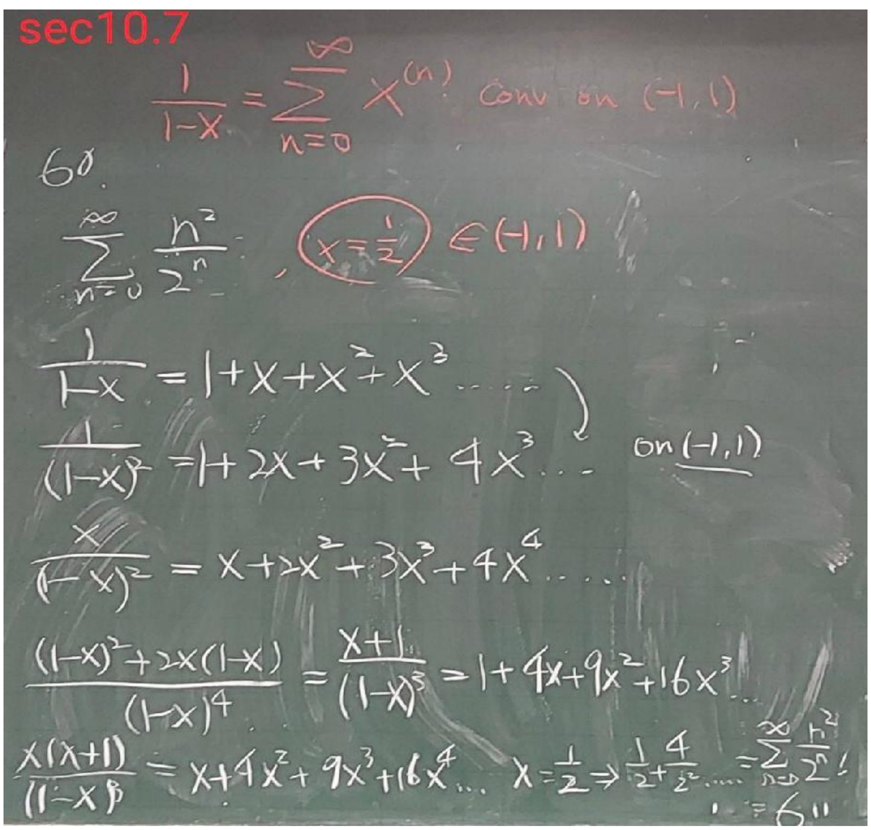

Figure 4: Solution to Section 10.7, problem 60

2. Section 10.8: Solutions, common mistakes and corrections:

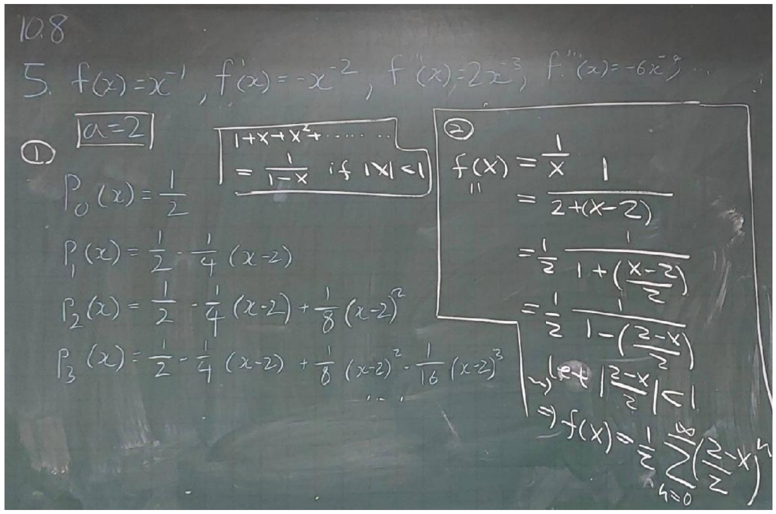

Figure 5: Solution to Section 10.8, problem 5

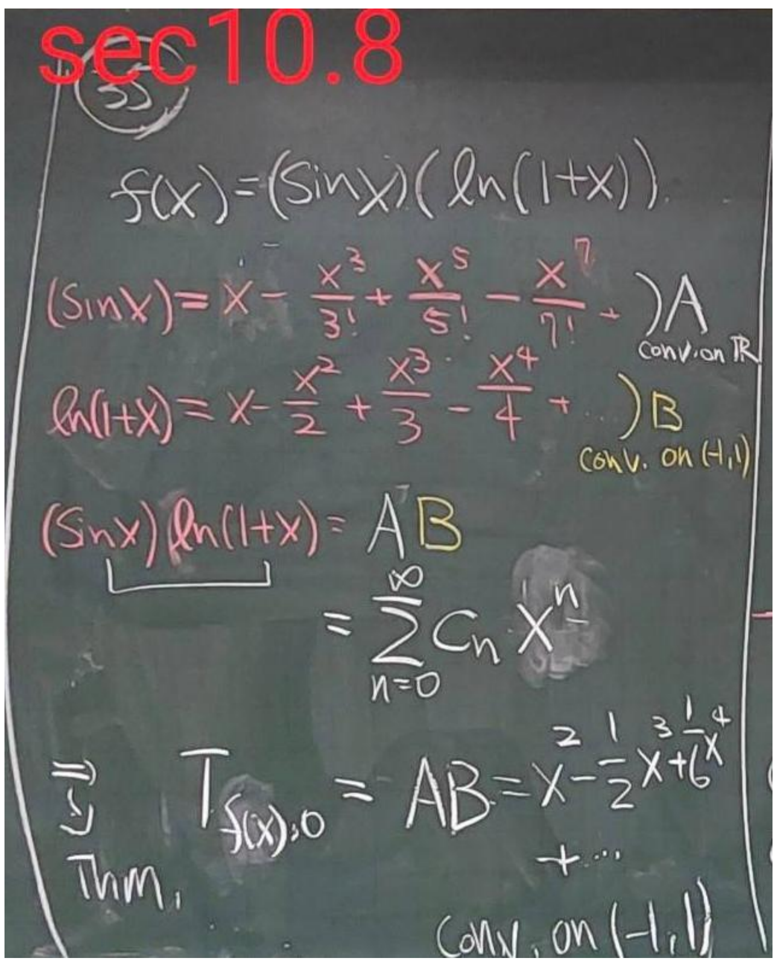

Figure 6: Solution to Section 10.8, problem 35