Brief solutions to selected problems in homework 05

1. Section 10.9: Solutions, common mistakes and corrections:

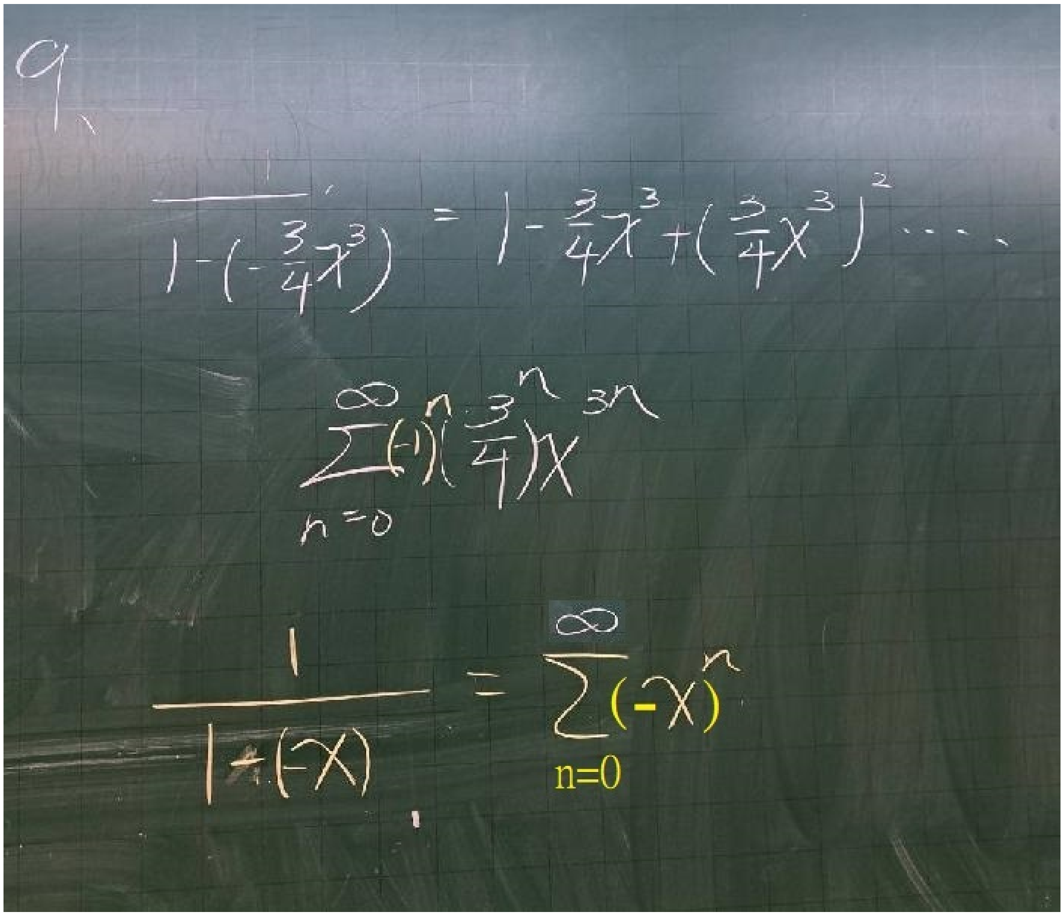

Figure 1: Section 10.9, problem 9

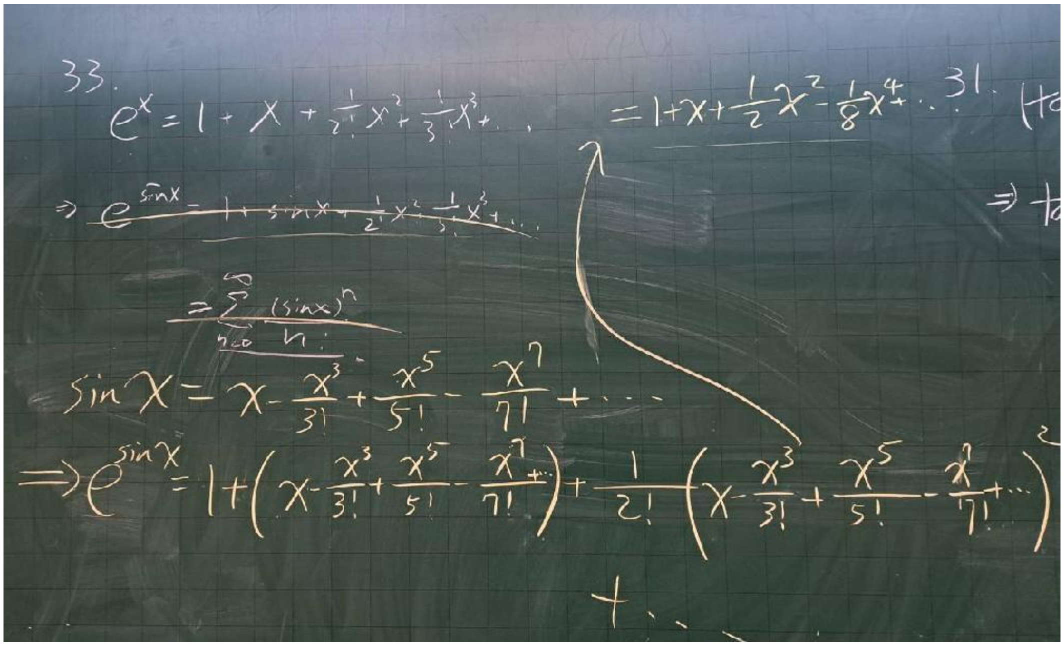

Figure 2: Section 10.9, problem 33

Remark:

$$x^2 \text{ term}: \frac{1}{2!}\left(x - \frac{x^3}{3!} + \frac{x^5}{5!} - \cdots\right)^2: \quad \frac{1}{2}$$

$$x^3 \text{ term}: \frac{1}{1!}\left(x - \frac{x^3}{3!} + \frac{x^5}{5!} - \cdots\right) + \frac{1}{3!}\left(x - \frac{x^3}{3!} + \frac{x^5}{5!} - \cdots\right)^3: \quad -\frac{1}{3!} + \frac{1}{3!} = 0$$

$$x^4 \text{ term}: \frac{1}{2!}\left(x - \frac{x^3}{3!} + \frac{x^5}{5!} - \cdots\right)^2 + \frac{1}{4!}\left(x - \frac{x^3}{3!} + \frac{x^5}{5!} - \cdots\right)^4: \quad \frac{1}{2!} \cdot \frac{-2}{3!} + \frac{1}{4!} = -\frac{1}{8}$$

2. Section 10.10: Solutions, common mistakes and corrections:

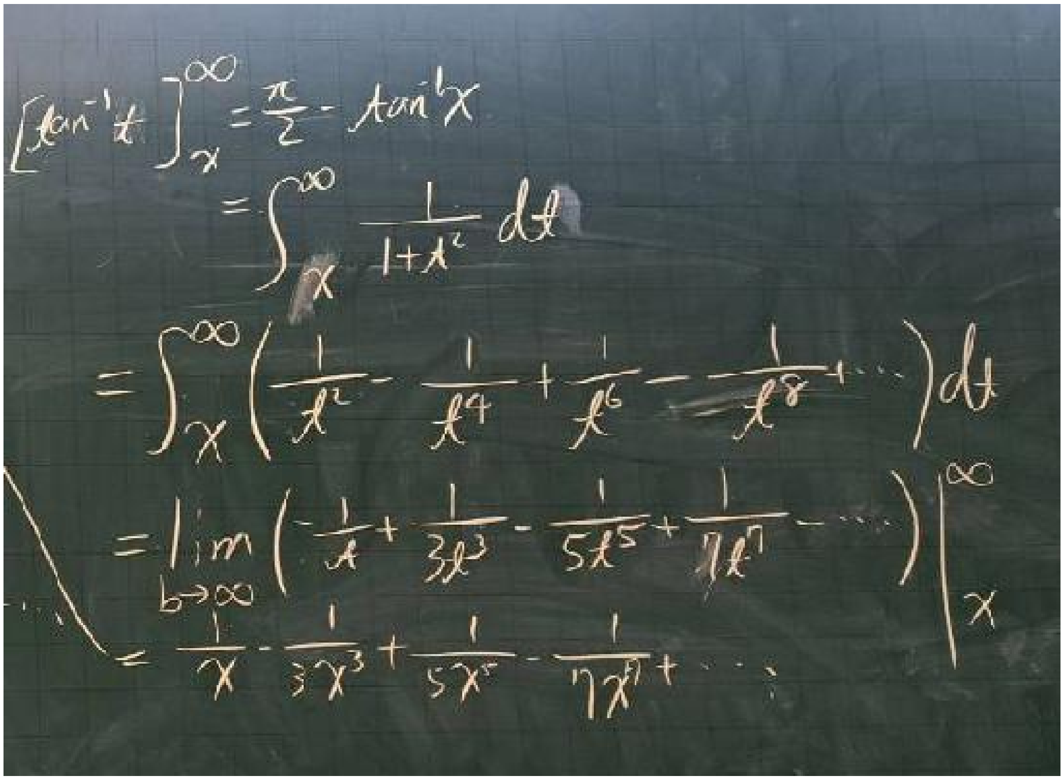

Figure 3: Section 10.10, problem 66-1

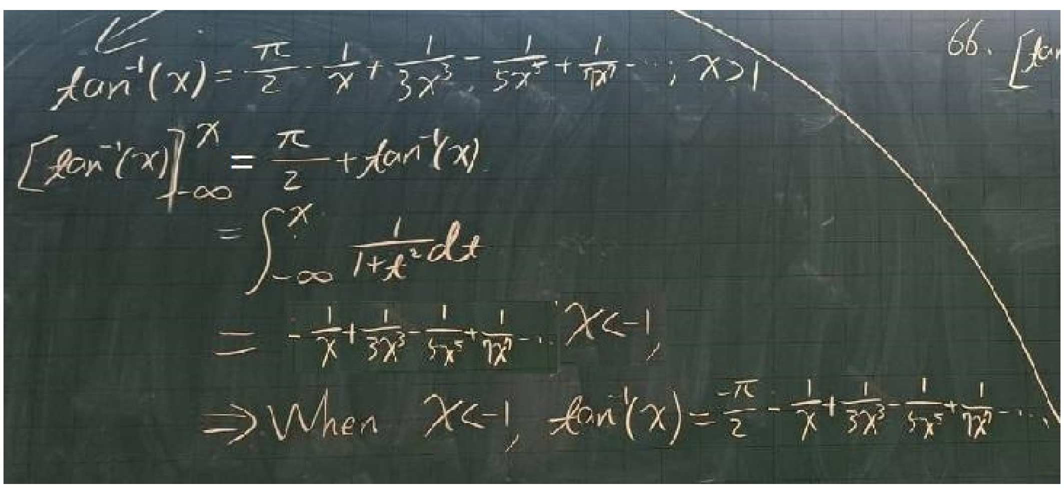

Figure 4: Section 10.10, problem 66-2