Brief solutions to selected problems in homework 05

1. Problem 1:

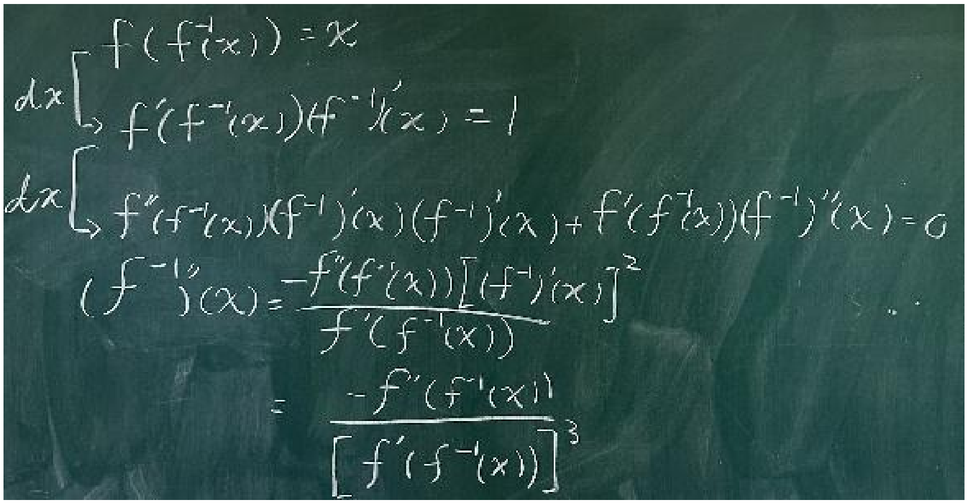

Figure 1: Solution to Homework 05, problem 1, method 1

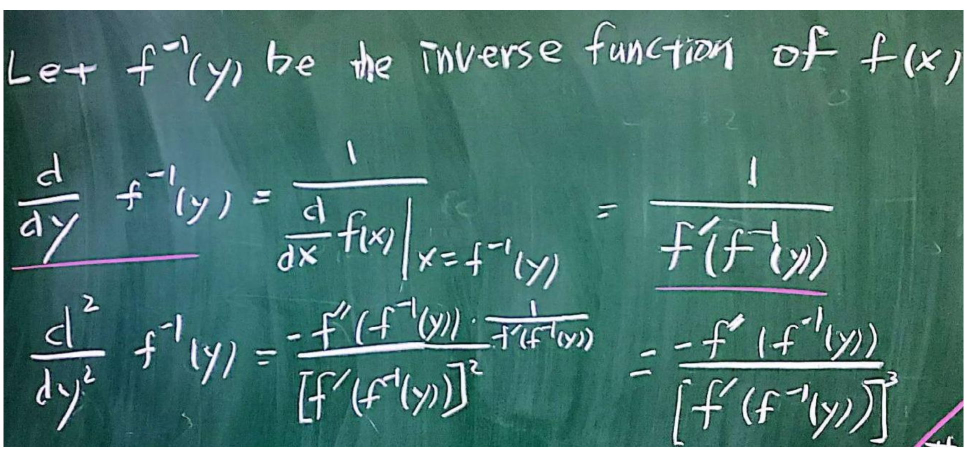

Figure 2: Solution to Homework 05, problem 1, method 2

2. Section 3.8: Solutions, common mistakes and corrections:

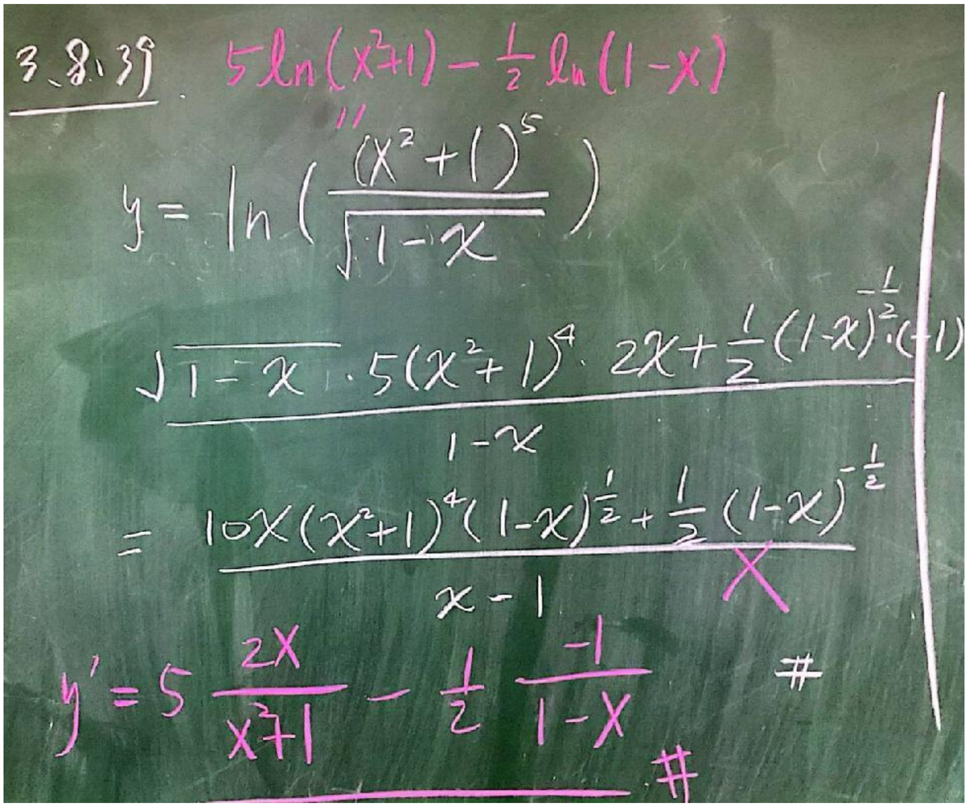

Figure 3: Solution to Section 3.8, problem 39

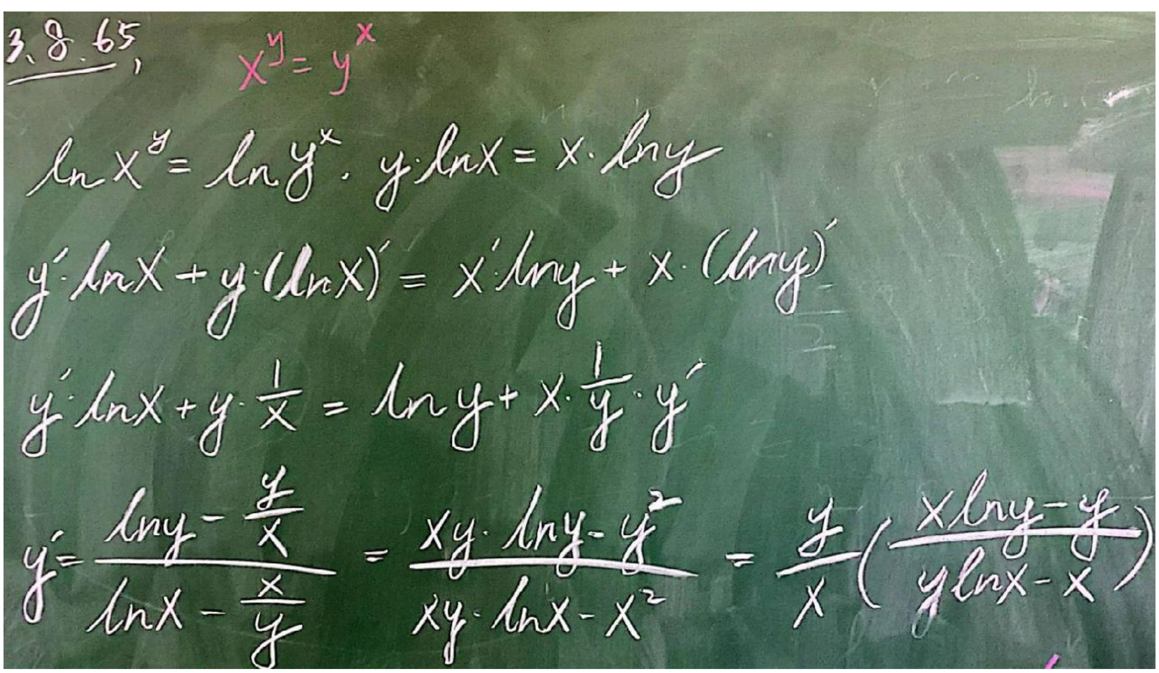

Figure 4: Solution to Section 3.8, problem 65

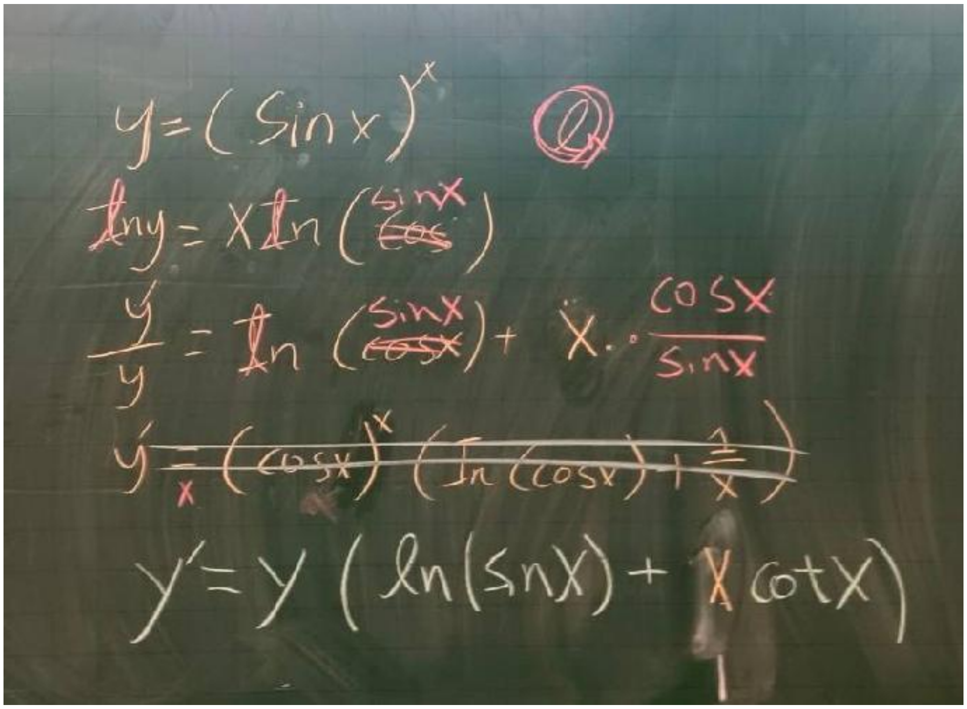

Figure 5: Solution to Section 3.8, problem 93. Alternative method: start with $y = \left(e^{\ln \sin x}\right)^x = e^{x \ln \sin x}$

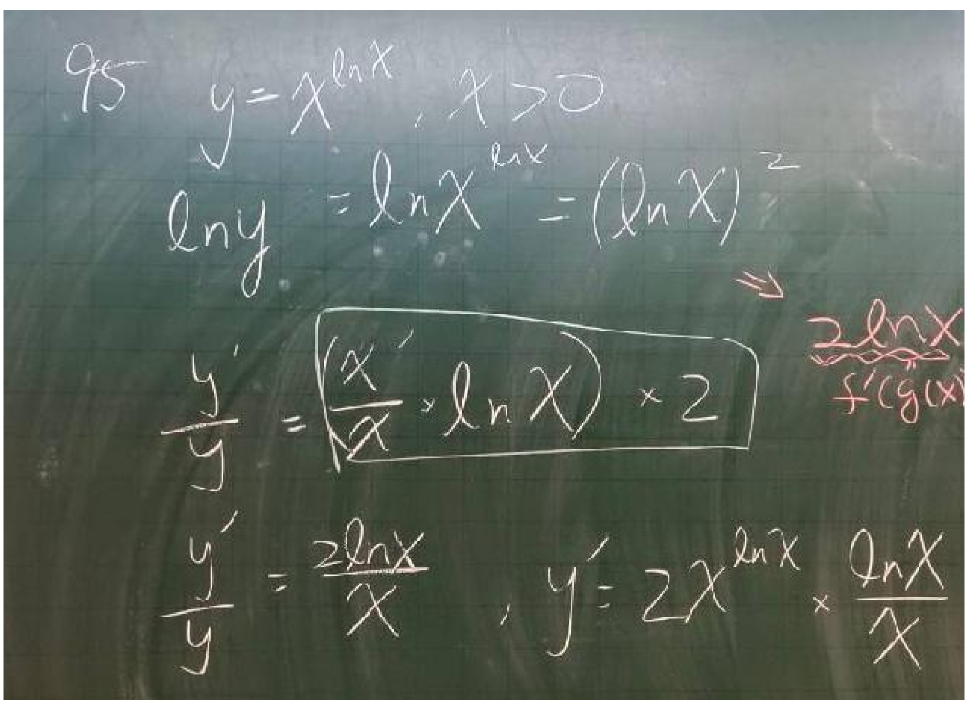

Figure 6: Solution to Section 3.8, problem 95. Alternative method: start with $y = \left(e^{\ln x}\right)^x = e^{(\ln x)^2}$

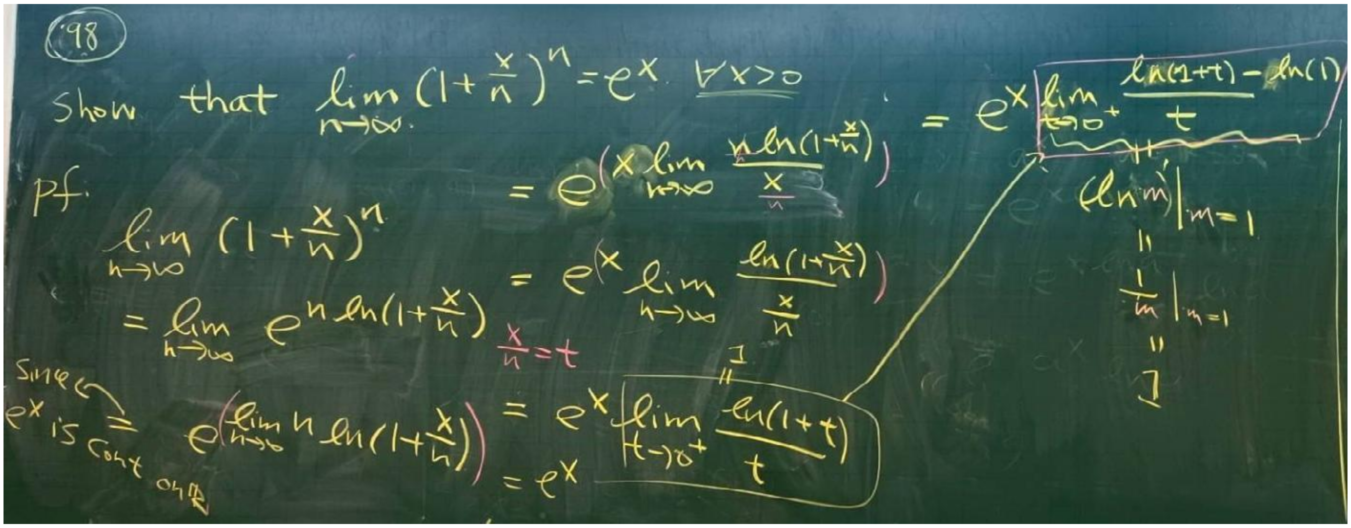

Figure 7: Solution to Section 3.8, problem 98

3. Section 3.9: Solutions, common mistakes and corrections:

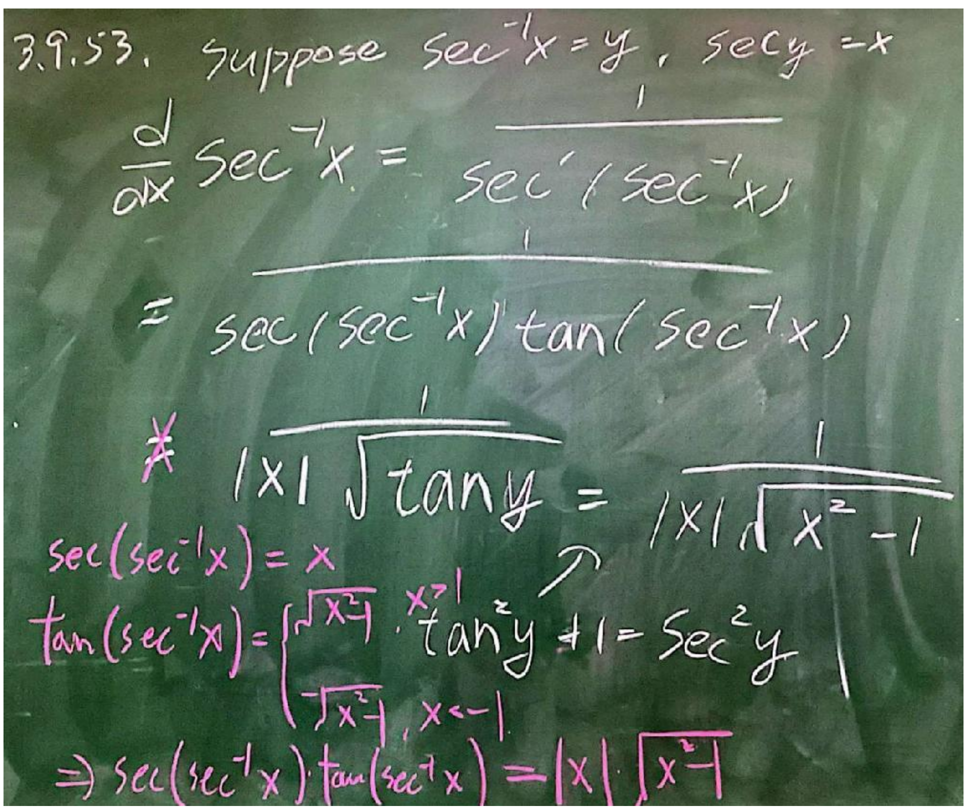

Figure 8: Solution to Section 3.9, problem 53

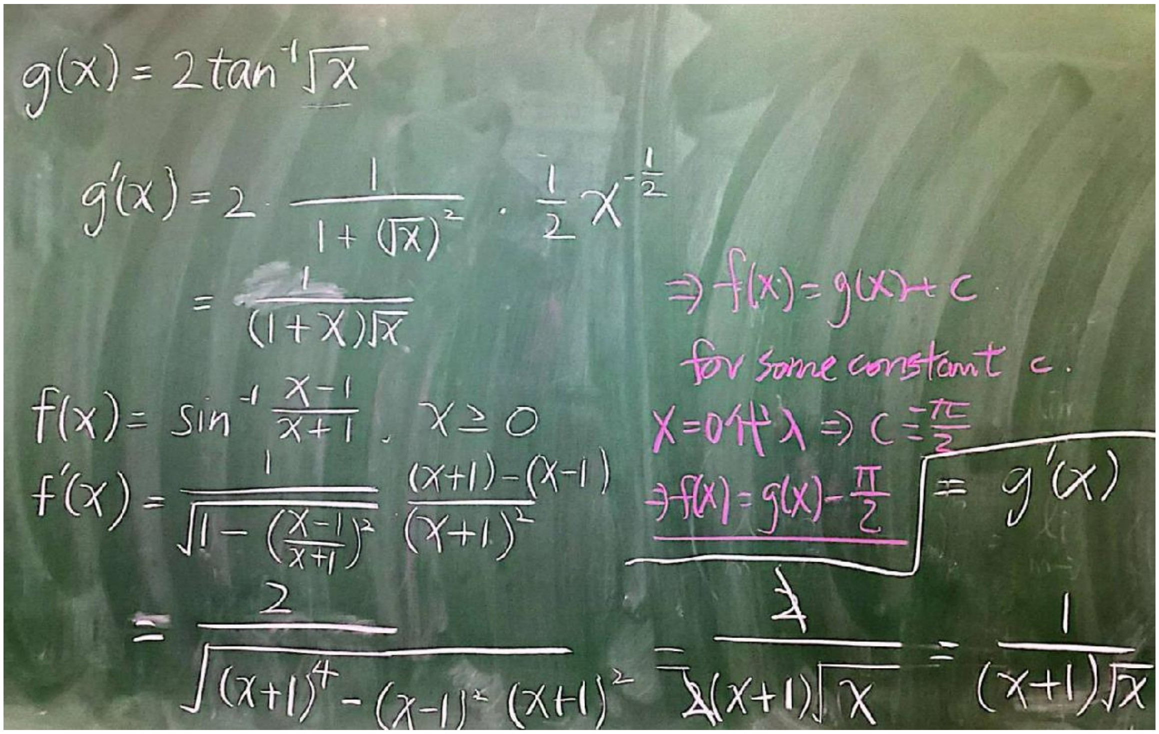

Figure 9: Solution to Section 3.9, problem 55

4. Chapter 3, additional and advanced problems: Solutions, common mistakes and corrections:

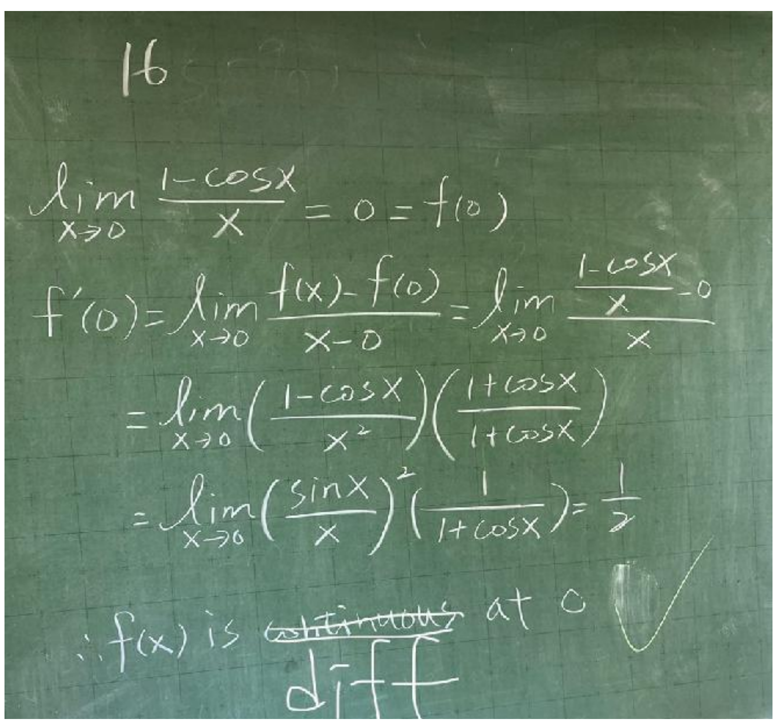

Figure 10: Solution to Chapter 3, additional and advanced problems: problem 16

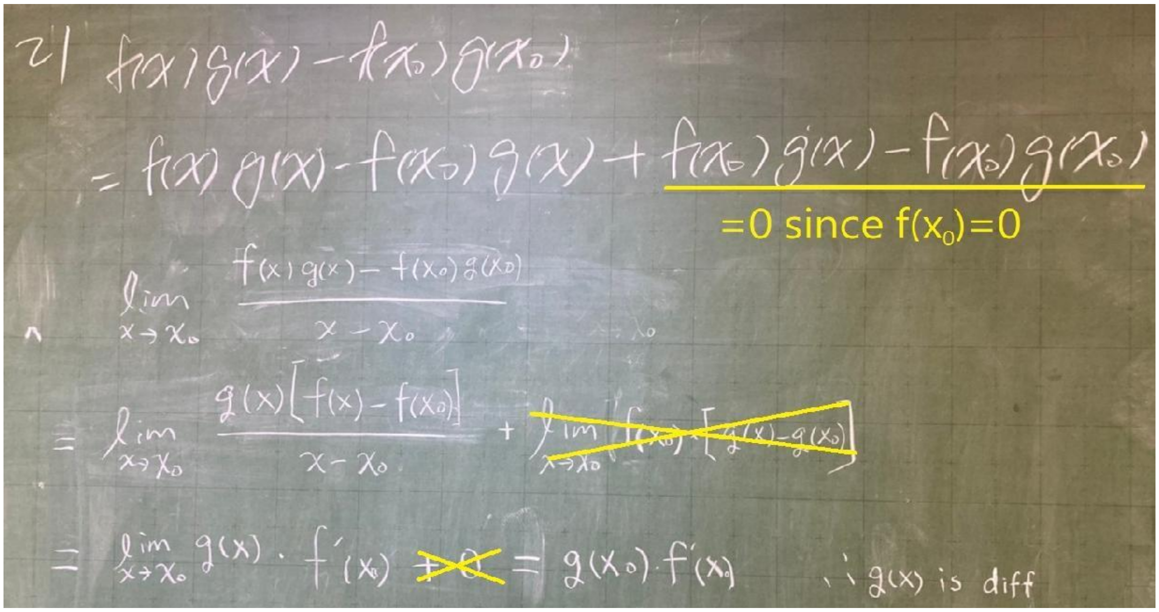

Figure 11: Solution to Chapter 3, additional and advanced problems: problem 21

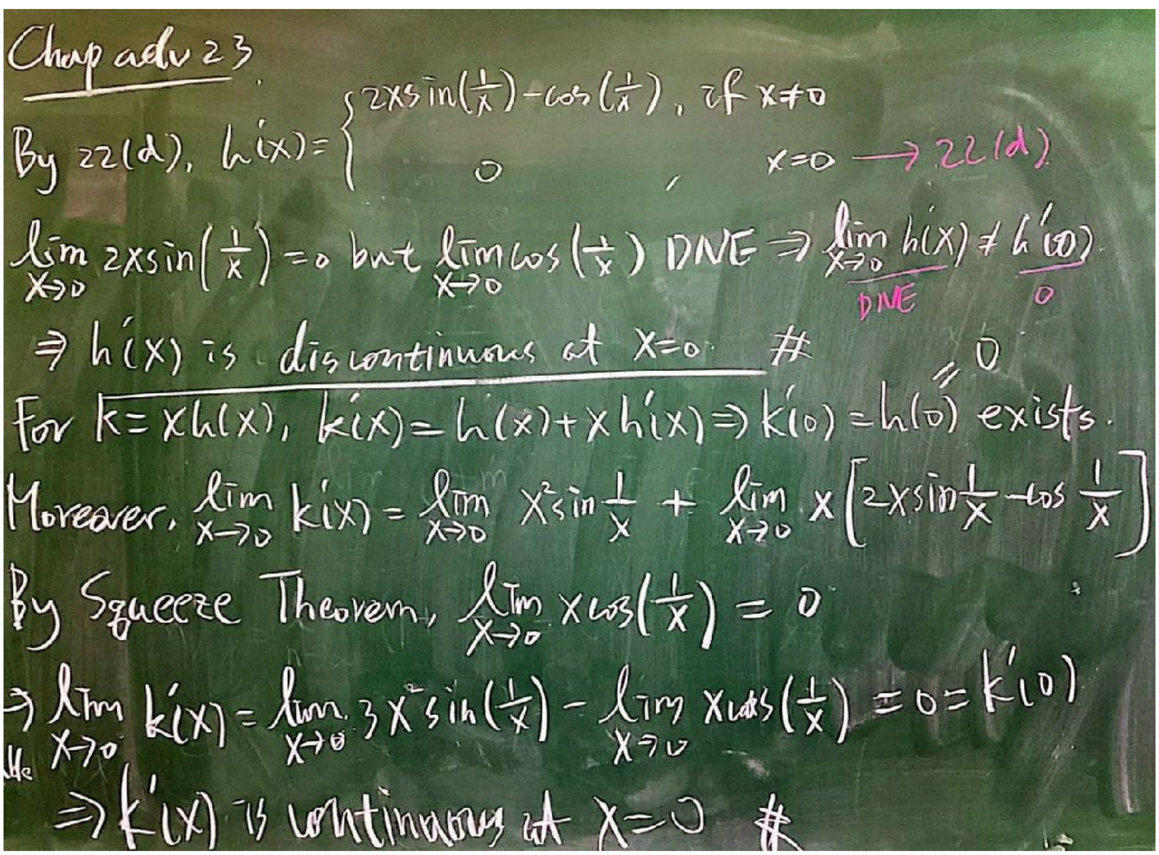

Figure 12: Solution to Chapter 3, additional and advanced problems: problem 23