## Brief solutions to selected problems in homework 14 (v02)

1. Section 8.3: Solutions, common mistakes and corrections:

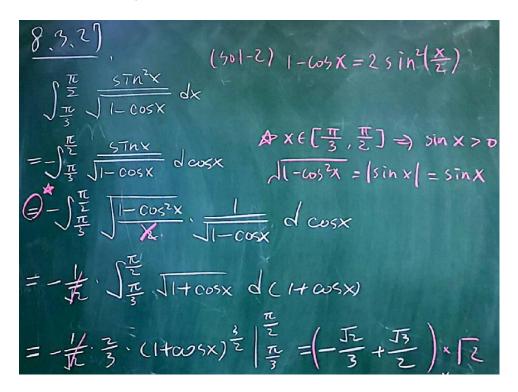


Figure 1: Solution to Section 8.3, problem 27

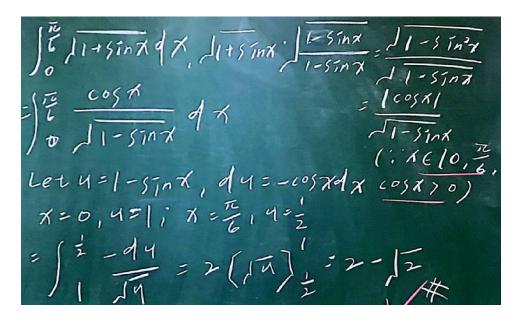


Figure 2: Solution to Section 8.3, problem 28

$$\int_{\xi_{\mathcal{R}}}^{\pi} \frac{\omega_{s} + \omega_{s}}{\sqrt{1-s_{1}n_{x}}} dx = \int_{\frac{1}{2}}^{1} \frac{t(z-t) \cdot [t-(z-t)]_{t}}{\sqrt{t}} dt - 11)$$

$$Let 1-s_{1}n_{x} = t$$

$$Let 2-t = u$$

$$\frac{d^{\frac{1}{2}}}{dx} = -\omega_{s} \times \Rightarrow \sin_{x} = 1 \cdot t \cdot (1-s_{1}n_{x})(1+s_{1}n_{x})$$

$$= (0)^{\frac{1}{2}} \times = + (2-t)$$

$$(0)^{\frac{1}{2}} = -\frac{1}{2}(2-t) \cdot u \cdot u \cdot u \cdot du = \int_{\frac{1}{2}}^{1} 2u \cdot u \cdot du - \int_{\frac{1}{2}}^{1} u^{\frac{1}{2}} \cdot u^{\frac{1}{$$

Figure 3: Solution to Section 8.3, problem 29

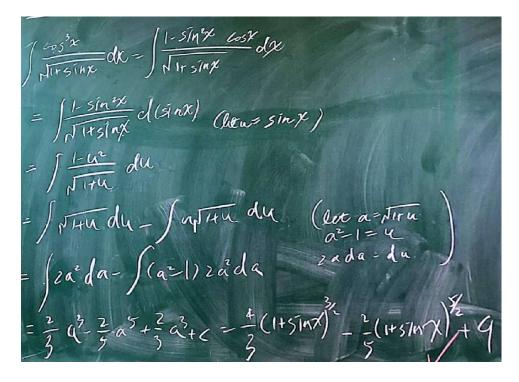


Figure 4: Solution to Section 8.3, problem 29.5

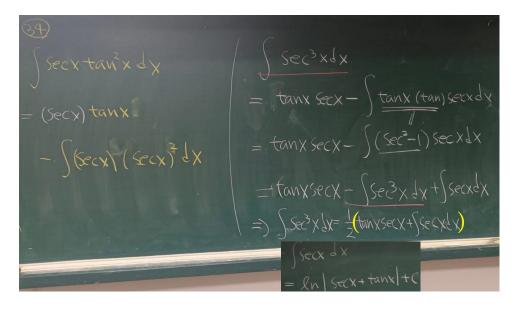


Figure 5: Solution to Section 8.3, problem 34

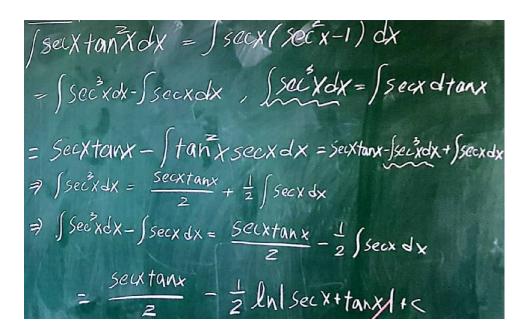


Figure 6: Solution to Section 8.3, problem 34. Another method

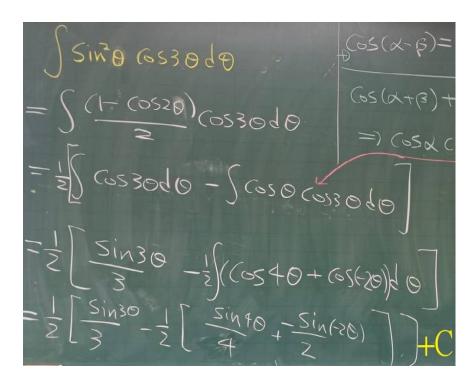


Figure 7: Solution to Section 8.3, problem 57

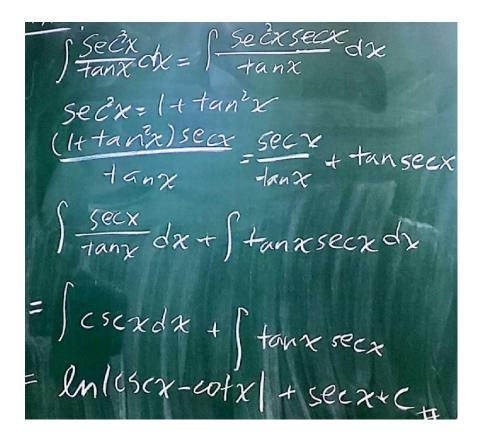


Figure 8: Solution to Section 8.3, problem 63

## 2. Section 8.4: Solutions, common mistakes and corrections:

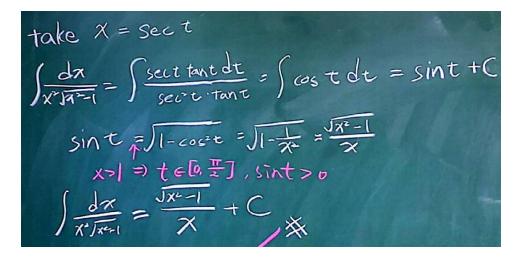


Figure 9: Solution to Section 8.4, problem 13

$$\int_{0}^{\frac{\pi}{2}} \frac{4x^{2}dx}{(1-x^{2})^{\frac{\pi}{2}}} = \frac{1}{(1-x^{2})^{\frac{\pi}{2}}} = \frac{1}{$$

Figure 10: Solution to Section 8.4, problem 23

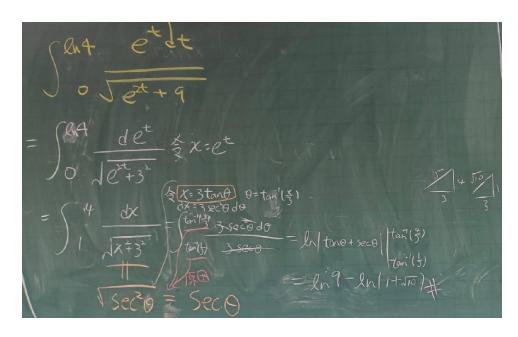


Figure 11: Solution to Section 8.4, problem 35

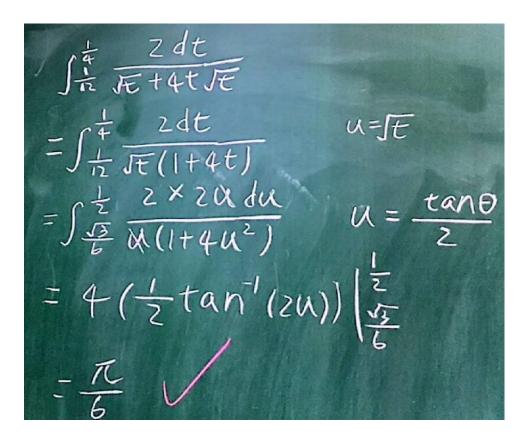


Figure 12: Solution to Section 8.4, problem 37

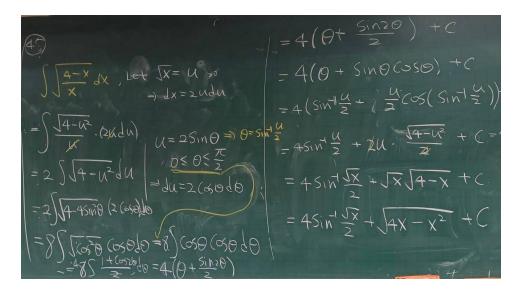


Figure 13: Solution to Section 8.4, problem 45

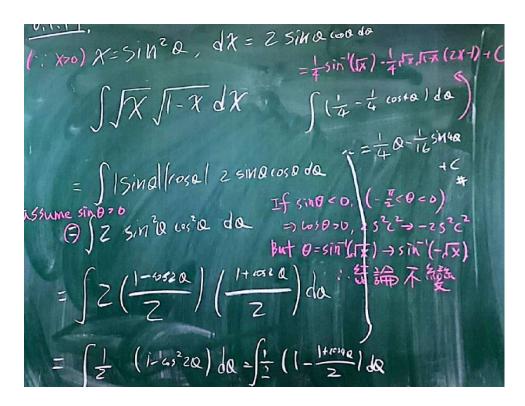


Figure 14: Solution to Section 8.4, problem 47

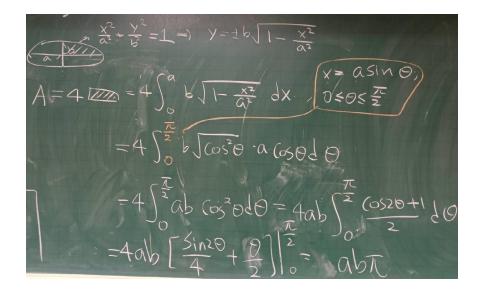


Figure 15: Solution to Section 8.4, problem 54

3. Section 8.5: Solutions, common mistakes and corrections:

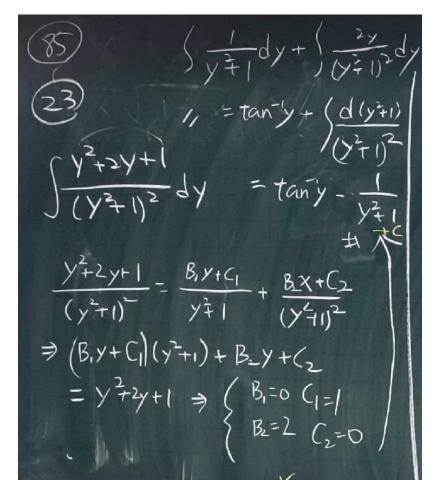


Figure 16: Solution to Section 8.5, problem 23

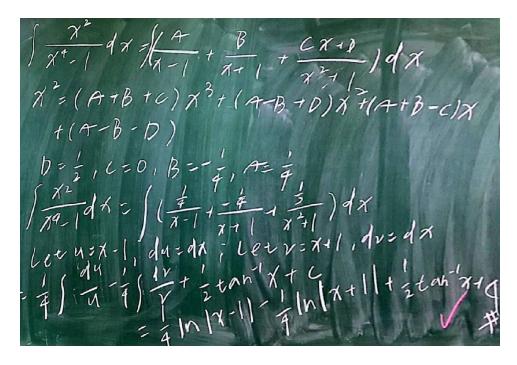


Figure 17: Solution to Section 8.5, problem 29. Remark: this method requires solving A, B, C, D from 4 linear equations.

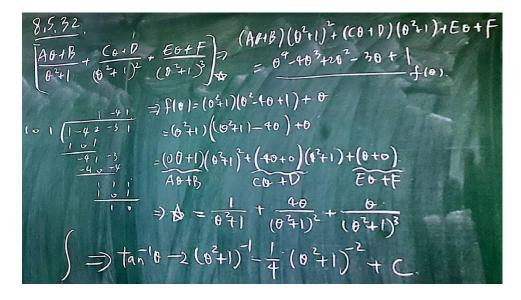


Figure 18: Solution to Section 8.5, problem 32

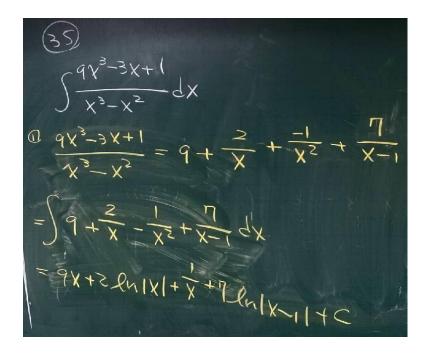


Figure 19: Solution to Section 8.5, problem 35

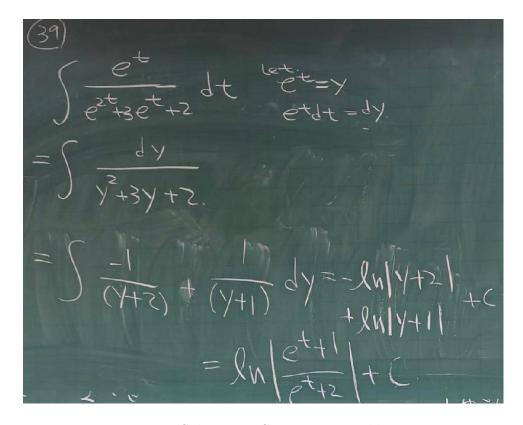


Figure 20: Solution to Section 8.5, problem 39

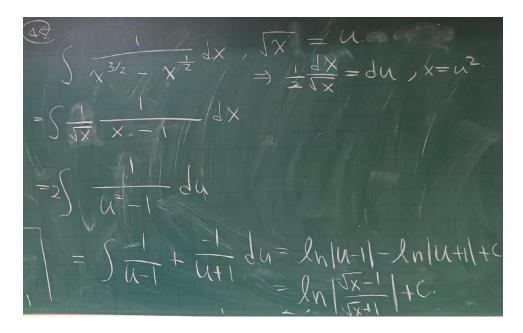


Figure 21: Solution to Section 8.5, problem 45

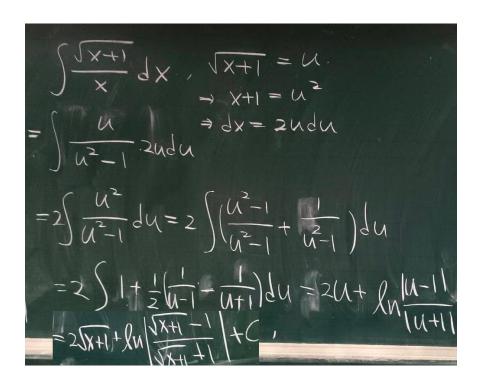


Figure 22: Solution to Section 8.5, problem 47

4. Chap 8: Additional and Advanced Exercises. Solutions, common mistakes and corrections:

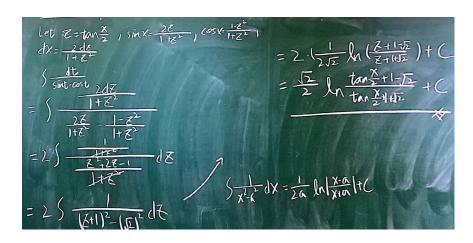


Figure 23: Solution to Chap 8: Additional and Advanced Exercises, problem 47

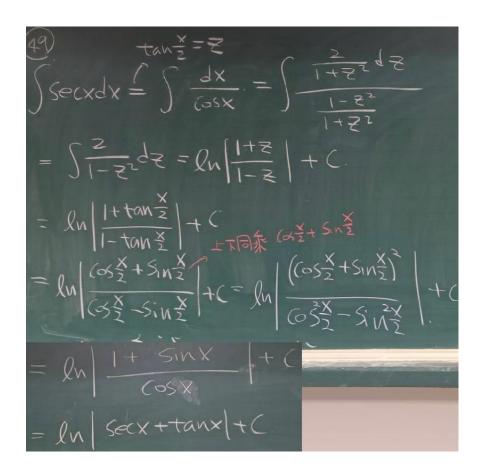


Figure 24: Solution to Chap 8: Additional and Advanced Exercises, problem 49