Brief solutions to selected problems in homework 10

1. Section 14.10: Solutions, common mistakes and corrections:

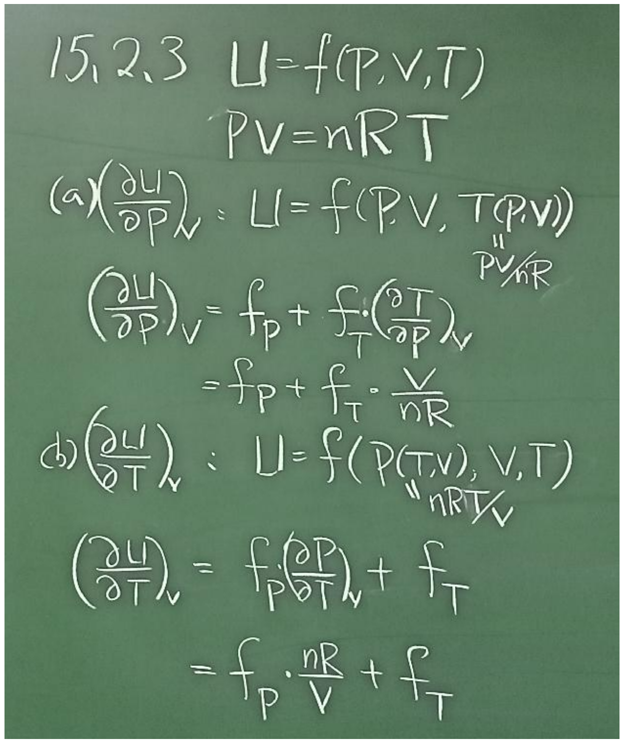

Figure 1: Solution to Section 14.10, problem 3

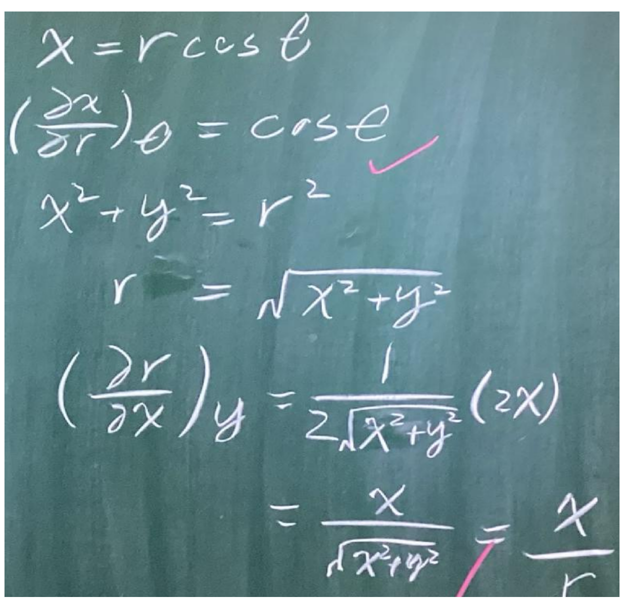

Figure 2: Solution to Section 14.10, problem 7

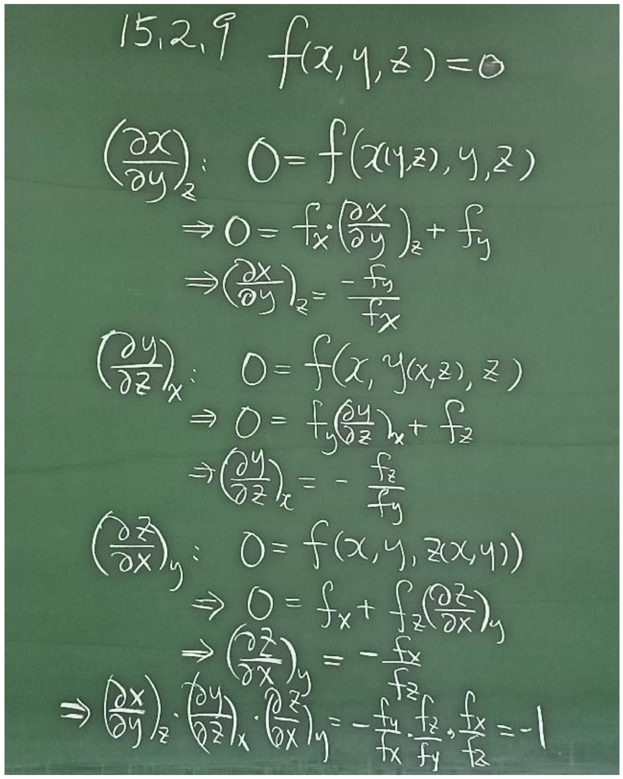

Figure 3: Solution to Section 14.10, problem 9

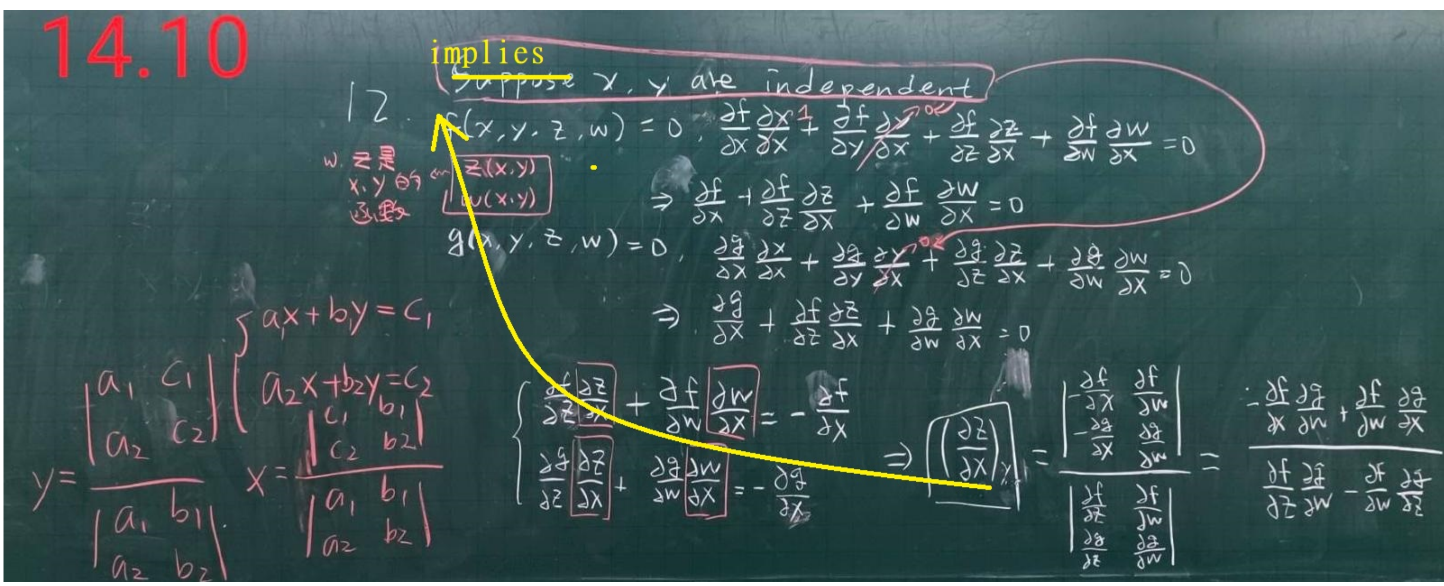

Figure 4: Solution to Section 14.10, problem 12

Remark: In other words, start with $f(x,y,z(x,y),w(x,y))=0$, $g(x,y,z(x,y),w(x,y))=0$, then proceed with ∂_x and ∂_y.

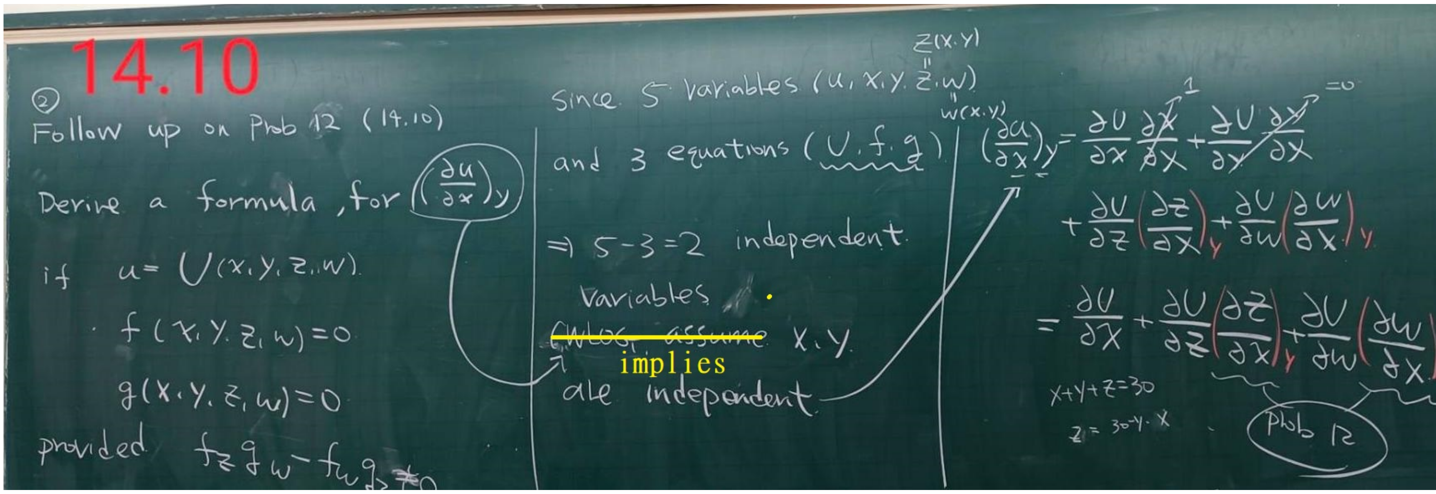

Figure 5: Solution to homework 10, problem 2

Remark: Start with $u = U(x, y, z(x, y), w(x, y)) = 0$, proceed with ∂_x, then substitute $\left(\dfrac{\partial w}{\partial x}\right)_y$ and $\left(\dfrac{\partial z}{\partial x}\right)_y$ computed from problem 12.

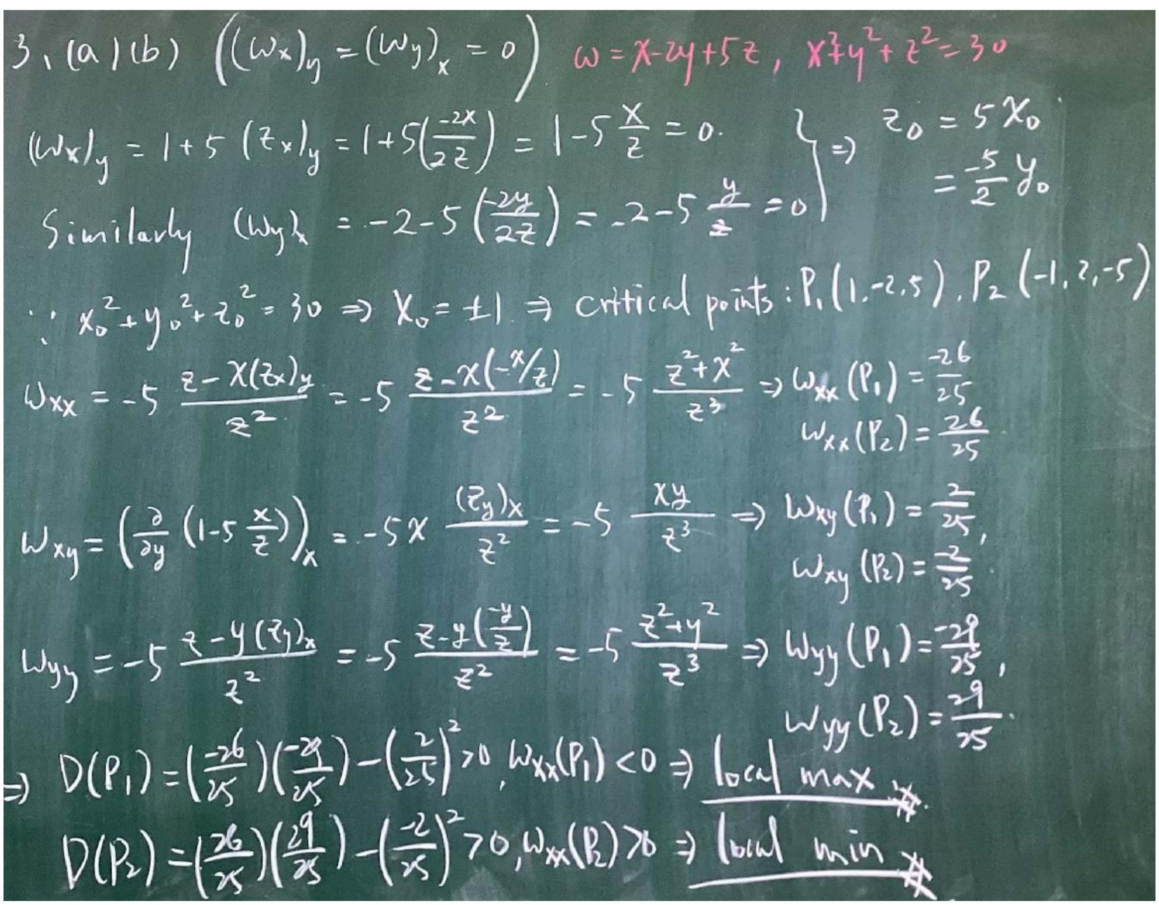

Figure 6: Solution to homework 10, problem 3

2. Section 15.1: Solutions, common mistakes and corrections:

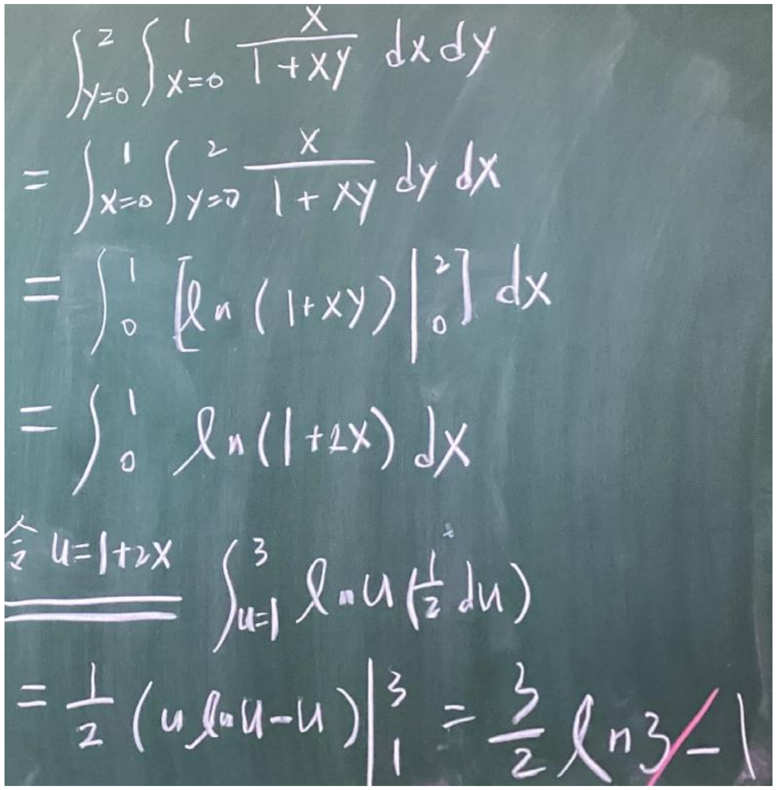

Figure 7: Solution to Section 15.1, problem 33

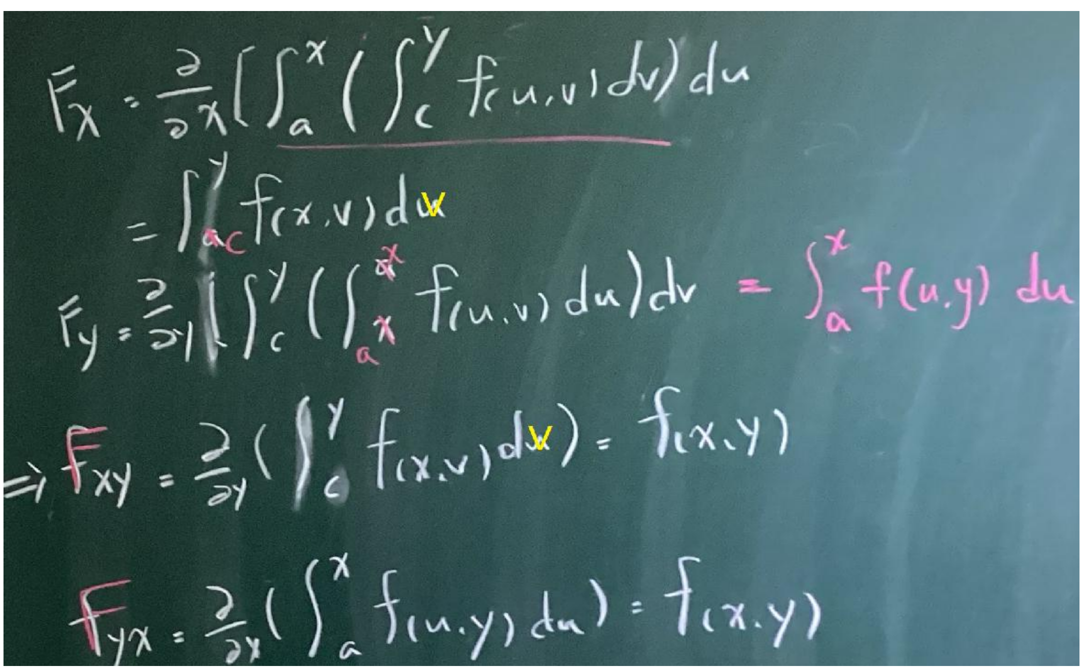

Figure 8: Solution to Section 15.1, problem 36

3. Section 15.2: Solutions, common mistakes and corrections:

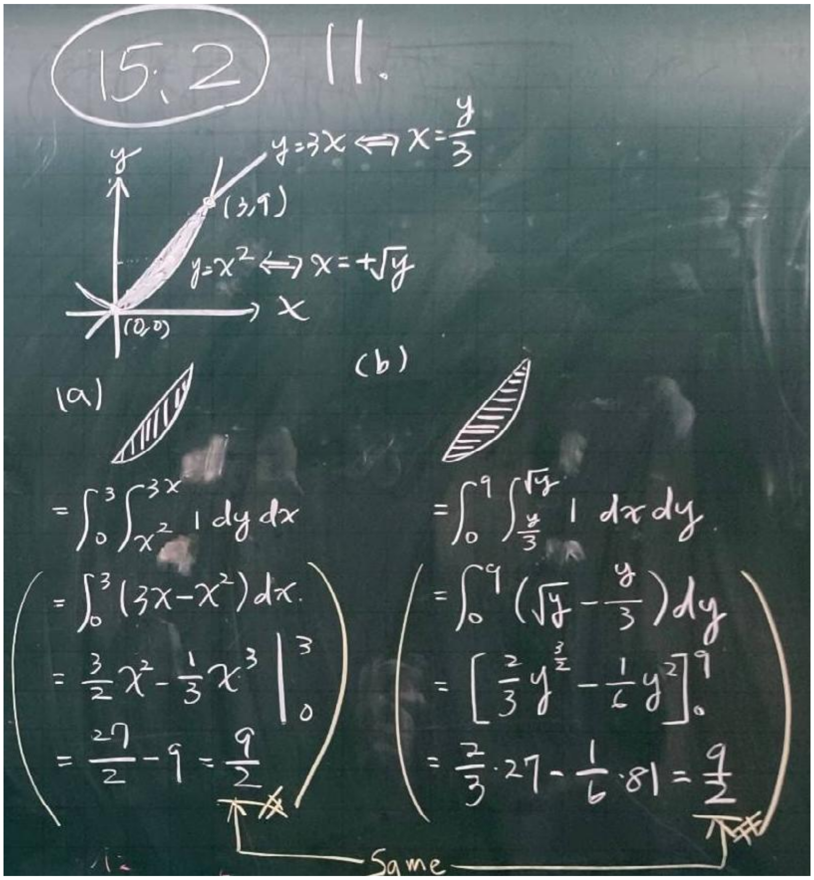

Figure 9: Solution to Section 15.2, problem 11

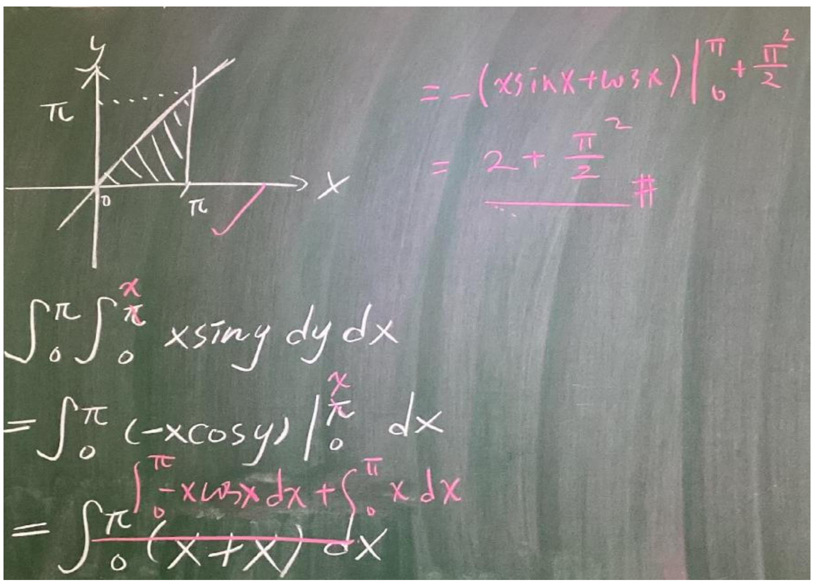

Figure 10: Solution to Section 15.2, problem 19

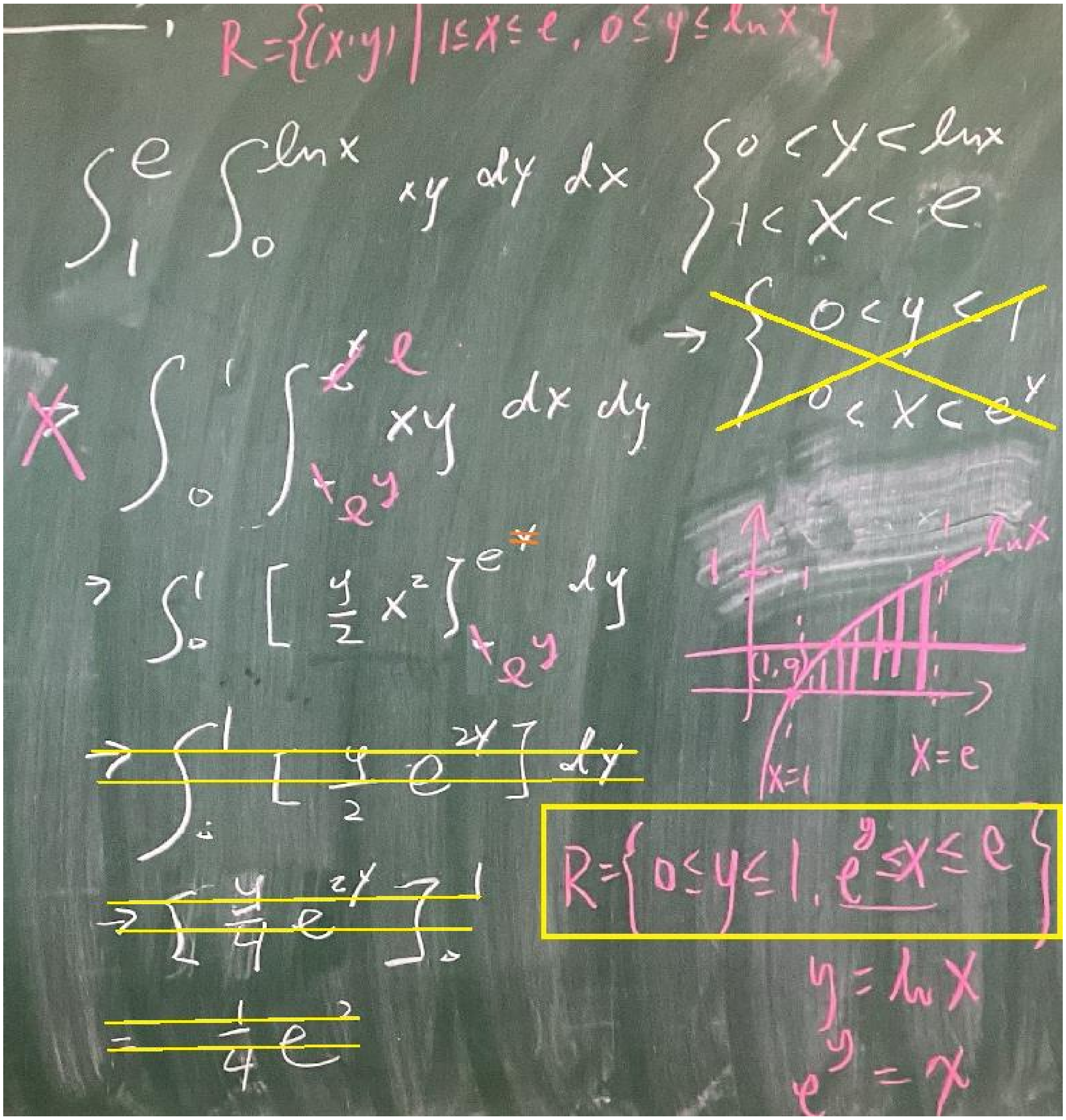

Figure 11: Solution to Section 15.2, problem 43

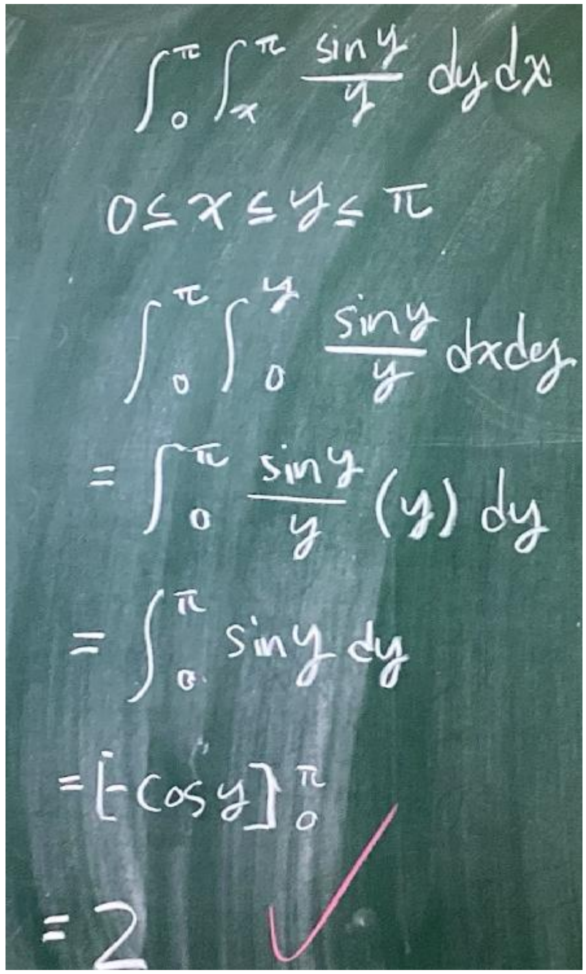

Figure 12: Solution to Section 15.2, problem 47

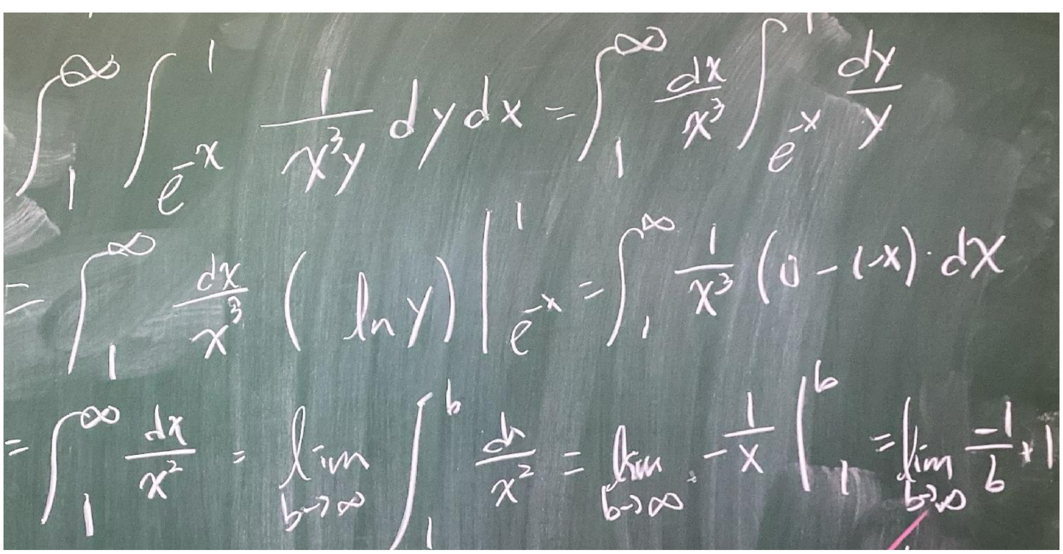

Figure 13: Solution to Section 15.2, problem 69