Brief solutions to selected problems in homework 12

1. Section 6.1: Solutions, common mistakes and corrections:

X Y=- $\int_{a}^{b} \pi [f(x)+1]^{2} dx = 8\pi X \left(\int_{a}^{b} \pi [f(x)+1]^{2} dx = 8\pi X \right) \times \left(\int_{a}^{a} \int_{a}^{b} (f(x)+1)^{2} dx = 8 = \frac{3}{2} \int_{a}^{b} (f(x)+1)^{2} dx = 8 = \frac{3}{2} \int_{a}^{b} f(x)^{2} dx + 2 \int_{a}^{b} f(x) dx + \int_{a}^{b} f(x) dx + \int_{a}^{b} f(x) dx + 2 \int_{a}^{b} f(x) dx + (b-a) = \frac{3}{2} \int_{a}^{b} f(x) dx$ $\begin{array}{c} (T, X - \alpha \mathbf{x}) \mathbf{x}; & \neq \mathbf{y} \mathbf{x} \\ V = \int_{a}^{b} \pi [f(\mathbf{x})]^{d} \mathbf{x} = 4\pi \quad \neq \mathbf{y} \\ \neq \int_{a}^{b} [f(\mathbf{x})]^{2} d\mathbf{x} = 4\pi \quad \neq \mathbf{y} \\ \neq \mathbf{y} \quad \neq \mathbf{y} \quad \neq \mathbf{y} \end{array}$ $= \int_{a}^{b} f(x) dx = \frac{4}{a}$ Avea R #

Figure 1: Solution to Section 6.1, problem 63

2. Section 6.3: Solutions, common mistakes and corrections:

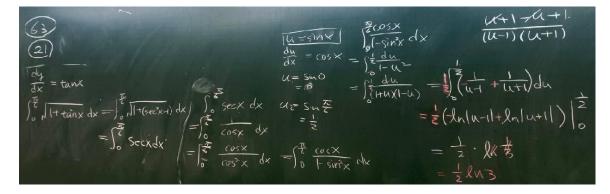


Figure 2: Solution to Section 6.3, problem 21

Sec 6-3 by Fundamental them of Glouly $35 \quad \exists (x) = \int_{0}^{x} \int coszt dt = \exists \forall (x) = \int coszx$ $\Rightarrow \int_{0}^{\frac{\pi}{4}} \int 1^{*} (\exists')^{*} dx = \int_{0}^{\frac{\pi}{4}} \int 1 + coszx dx = \int_{0}^{\frac{\pi}{4}} \int zosx dx$ DAN $\left(\begin{array}{c} \cdots & \cos x \neq 0 \end{array} \right) = \int \overline{z} \int \left(\begin{array}{c} \frac{\pi}{4} \\ \cos x & \partial t \end{array} \right) = \int \overline{z} \int \left(\begin{array}{c} \cos x & \partial t \end{array} \right) = \int \overline{z} \\ \cos x & \partial t \end{array} = \int \overline{z} \\ \sin x \int \overline{z$

Figure 3: Solution to Section 6.3, problem 25

 $9x^{2} = 3(3-3)^{2} \Rightarrow 18 \times dx = [(3-3)^{2}+23(3-3)] dy$ $36 \times dx = (3-3)(3-1) dy$ $36x^{2} dx^{2} = (3-3)^{2}(3-1)^{2} dy^{2}$ $36x^{2} dx^{2} = \frac{(3-3)^{2}(3-1)^{2}}{4 \cdot 3(3-3)^{2}} dy^{2}$ 29 $dS^2 = dx^2 + dy$ $= \frac{(y-1)^{2}}{4y^{2}} dy^{2} + dy^{2} = \left[\frac{(y-1)^{2} + 4y}{4y^{2}}\right] dy^{2} = \frac{(y+1)^{2}}{4y^{2}} dy^{2} = \frac{(y+1)^{2}}{4$

Figure 4: Solution to Section 6.3, problem 29