Name	Student ID
Saad Alhamdan	435103974

BMT223 Assignment #5

Solve the following integrals:

1- $\int \sin\left(\frac{x}{3}\right) dx$

By using "Rule: 6 – Page: 697":

$$\int \sin(kx)\, dx = \frac{-\cos(kx)}{k} + C$$

$$\int \sin\left(\frac{x}{3}\right) dx = -3\cos\left(\frac{x}{3}\right) + C$$

2- $\int e^{kv}\, dv$

By using "Rule: 14 – Page: 697":

$$\int e^{kx}\, dx = \frac{e^{kx}}{k} + C$$

$$\int e^{kv}\, dv = \frac{e^{kv}}{k} + C$$

3- $\int -\frac{6}{t}\, dt$

By using "Rule: 5 – Page: 697":

$$\int \frac{1}{x}\, dx = \ln|x| + C$$

$$\int -\frac{6}{t}\, dt = -6 \int \frac{1}{t}\, dt = -6\ln|t| + C$$

4- $\int_{-1}^{1} y^3\, dy$

By using "Rule: 4 – Page: 697":

$$\int x^n\, dx = \frac{x^{n+1}}{n+1} + C$$

$$\int_{-1}^{1} y^3\, dy = \left(\frac{y^4}{4}\right)_{-1}^{1} = \left(\frac{(1)^4}{4}\right) - \left(\frac{(-1)^4}{4}\right) = 0$$