Midterm 4
27.01.10

Name:

Exercise 1. Compute the indefinite integral:

$$\int x \cos\left(\frac{x}{2}\right) dx.$$

Solution:

Exercise 2. Compute the indefinite integral:

$$\int \frac{2\,\cos(x)}{\sin^2(x)}\,dx.$$

Solution:

Exercise 3. Compute the definite integral:

$$\int_0^1 \sqrt{1+x}\, dx.$$

Solution:

Exercise 4. Compute the definite integral:

$$\int_0^{2\pi} |\sin(x)|\, dx.$$

Solution:

Exercise 5. Compute the volume of the solid of revolution, obtained by rotating the region under the graph of $\sin(x)$ between 0 and π about the OX axis

Solution:

Exercise 6. Compute the definite integral:

$$\int_0^{\pi/2} x \cos(x)\, dx.$$

Solution: