

Homework 18

Note Title

4/6/2009

① Warm-up questions:

$$a) \int 3x^3 - \frac{5}{x} dx$$

$$b) \int 7e^x - \frac{\sqrt{x}}{3} dx$$

c) If $y'(x) = e^x + 8x$ and $y(0) = 4$, find $y(x)$

② Evaluate the following definite integrals:

$$a) \int_0^1 2x dx$$

$$b) \int_1^2 x^2 - \frac{1}{x^2} dx$$

$$c) \int_1^4 \frac{1}{x} - 3\sqrt{x} dx$$

④ The following integrals represent an area.

Find it geometrically

a) $\int_1^4 5 \, dx$

b) $\int_0^2 3x \, dx$

c) $\int_1^2 x \, dx$

⑤ Find the following definite integrals and compare your answers with the ones above:

a) $\int_1^4 5 \, dx$

$$b) \int_0^2 3x \, dx$$

$$c) \int_1^2 x \, dx$$

⑥ Find the area between the graph of $y = 4 - x^2$ and the x -axis as x goes from -2 to 2 .

⑦ Evaluate $\int_{-1}^1 x^3 \, dx$. Why is that strange?

What is the true area between $y = x^3$ and the x -axis as x goes from -1 to 1 .