

Definite integral

November 16, 2016

Problems

Problem 1. Compute the integral $\int_0^2 x^2 - 2x dx$ by definition.

Problem 2. Use the Min/Max inequality to estimate the value of $\int_0^1 \frac{1}{x^2+1} dx$.

Problem 3. Water is pouring out of a pipe at the rate of $f(t)$ gallons/minute. You collect the water that flows from the pipe between $t = 2$ and $t = 4$. The amount of water you collect can be represented by:

- (a) $\int_2^4 f(x) dx$
- (b) $f(4) - f(2)$
- (c) $(4 - 2)f(4)$
- (d) the average of $f(4)$ and $f(2)$ times the amount of time that elapsed.

