

Свойства определённого интеграла

$$1. \int_a^b f(x) dx = \int_{a_1}^{b_1} f(t) dt = \int_{a_2}^{b_2} f(u) du = \dots$$

$$2. \int_a^b (f_1(x) + \dots + f_n(x)) dx = \int_a^b f_1(x) dx + \dots + \int_a^b f_n(x) dx$$

$$3. \int_a^b kf(x) dx = k \int_a^b f(x) dx$$

$$4. \int_a^b f(x) dx = - \int_b^a f(x) dx$$

$$5. \int_a^b dx = b - a$$

$$6. \int_a^b f(x) dx = \int_a^c f(x) dx + \int_c^b f(x) dx$$

$$7. \int_a^b f(x) dx \geq 0, \quad f(x) \geq 0 \text{ на } [a, b]$$

$$8. m(b - a) < \int_a^b f(x) dx < M(b - a), \quad a < b$$