



$$\Delta y = A \cdot \Delta x + o(\Delta x) \cdot \Delta x,$$
$$dy = f'(x) dx, \quad x \in (a; b)$$
$$f(x) \approx f(x_0) + \underbrace{f'(x_0) \Delta x}_{df(x_0)}$$

$$dy = f'(x) dx, \quad x \in D$$

$$f(x_0 + \Delta x) \approx f(x_0) + \underbrace{f'(x_0)\Delta x}_{df(x_0)}$$

$$f(x_0 + \Delta x) \approx f(x_0) + df(x_0)$$

1. $dC = 0$, rne
2. $d(\alpha v) = \alpha \cdot dv$
3. $d(u \pm v) = du \pm dv$
4. $d(u \cdot v) = u dv + v du$
5. $d\left(\frac{u}{v}\right) = \frac{v du - u dv}{v^2}$

$$C = 0, \text{ где } C - \text{const}$$

$$d(\alpha u) = \alpha \cdot du, \text{ где } \alpha = \text{const}$$

$$d(u \pm v) = du \pm dv$$

$$d(u \cdot v) = u dv + v du$$

$$d\left(\frac{u}{v}\right) = \frac{v du - u dv}{v^2}, \text{ где } v(x) \neq 0$$

$$d^2 y = f''(x) dx^2$$

$$f(a) = f'(c)(b-a)$$

$d(u \cdot v) = u dv + v du$
 $d\left(\frac{u}{v}\right) = \frac{v du - u dv}{v^2}$
 $d^2 y = f''(x) dx^2$
 $f(b) - f(a) = f'(c)(b - a)$
 $\frac{f(b) - f(a)}{g(b) - g(a)} = \frac{f'(c)}{g'(c)}$
 $\frac{f(x)}{g(x)} = \lim_{x \rightarrow x_0} \frac{f'(x)}{g'(x)}$

$$\lim_{x \rightarrow x_0} \frac{f(x)}{g(x)} = \lim_{x \rightarrow x_0} \frac{f'(x)}{g'(x)}$$

$\lim_{x \rightarrow x_0} \frac{f(x)}{g(x)} = \lim_{x \rightarrow x_0} g(x)$
 $f(x) = f(x_0) + \frac{f'(x_0)}{1!}(x-x_0) + \frac{f''(x_0)}{2!}(x-x_0)^2 + \dots$
 $\dots + \frac{f^{(n)}(x_0)}{n!}(x-x_0)^n + o((x-x_0)^n)$ при $x \rightarrow x_0$
 $f(x) = f(0) + \frac{f'(0)}{1!}x + \frac{f''(0)}{2!}x^2 + \dots + \frac{f^{(n)}(0)}{n!}x^n + o(x^n)$



BUKLET

Елкиной Галины

ПО ТЕМЕ "ПРОИЗВОДНЫЕ"

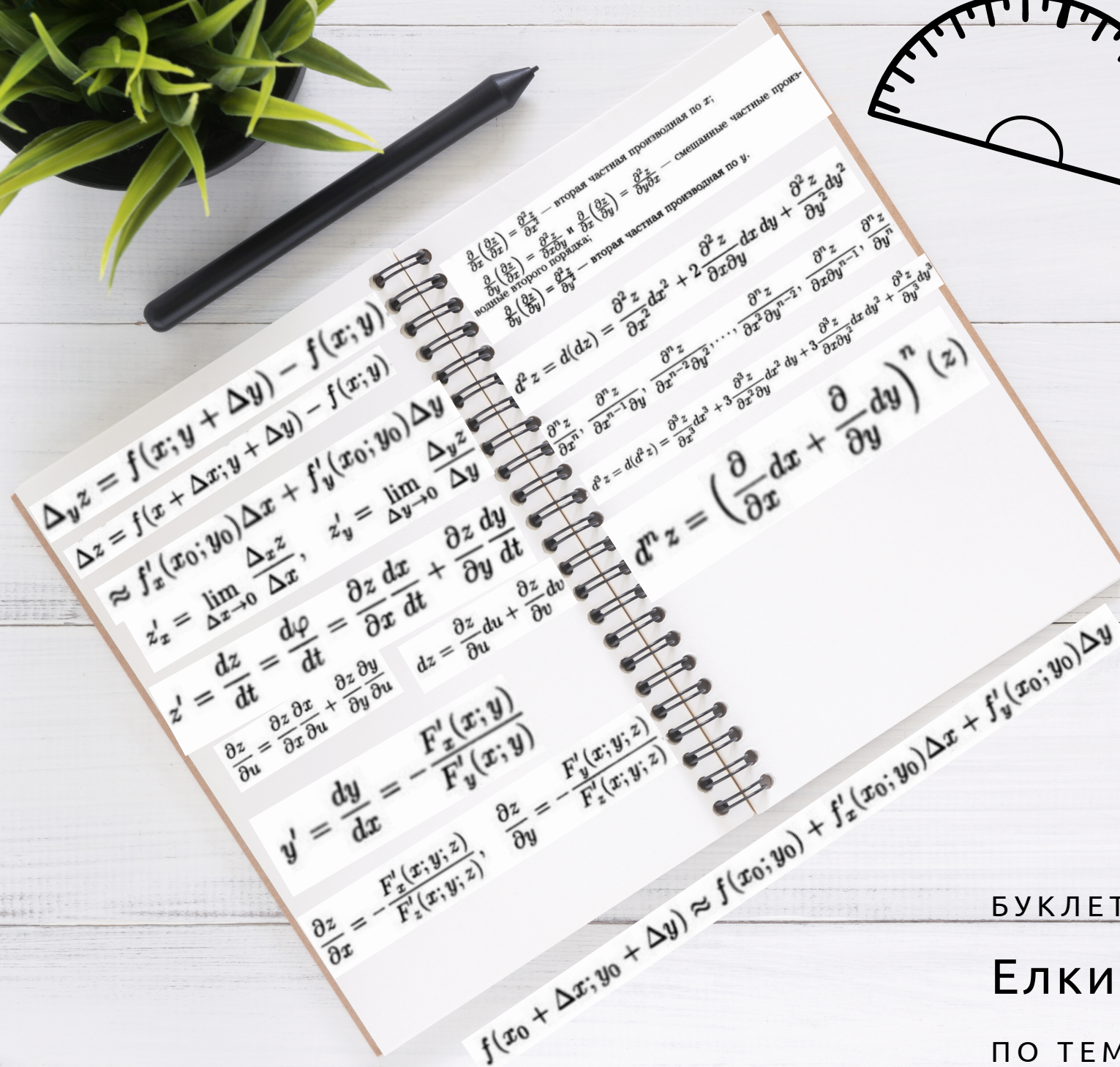
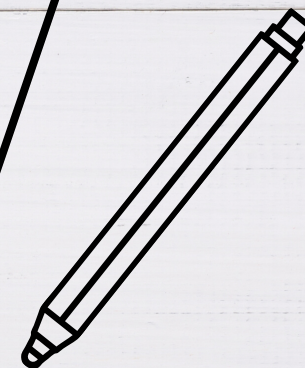
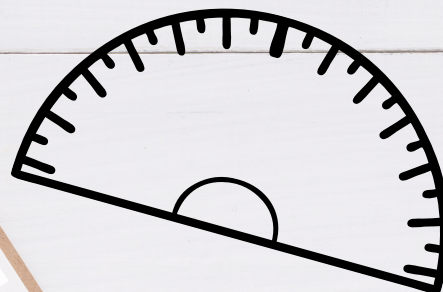
$$e^x = 1 + x + \frac{x^2}{2!} + \dots + \frac{x^n}{n!} + o(x^n),$$

$$\sin x = x - \frac{x^3}{3!} + \frac{x^5}{5!} + \dots + \frac{(-1)^n \cdot x^{2n+1}}{(2n+1)!} + o(x^{2n+2}),$$

$$\cos x = 1 - \frac{x^2}{2!} + \frac{x^4}{4!} + \dots + \frac{(-1)^n \cdot x^{2n}}{(2n)!} + o(x^{2n+1}),$$

$$\ln(1+x) = x - \frac{x^2}{2} + \frac{x^3}{3} + \dots + \frac{(-1)^{n-1} \cdot x^n}{n} + o(x^n),$$

$$(1+x)^a = 1 + ax + \frac{a(a-1)}{2!} x^2 + \dots + \frac{a(a-1) \dots (a-(n-1))}{n!} x^n + o(x^n)$$



БУКЛЕТ

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