

Fisa de lucru -MICROSOFT WORD

Editati urmatoarele formule:

I. Indice

a. $x_1 = x_2 = a$

b. $x_1 + x_2 = x_3 + x_4$

c. $2x_1 - 2x_2 = 4x_3 - 3x_4$

d. $x_1 - 2x_2 + 3x_3 = 3x_4 + 2x_5 + 4x_6$

II. Exponent

a. $x^3 + 3x^2 + 2x + 1 = 0$

b. $7x^5 + 6x^4 + 4x^3 + 3x^2 + 2x + 9 = 0$

c. $x^8 + x^7 - x^6 - x^5 + x^4 - x^3 + x^2 + 2x - 1 = 0$

III. Fractii

a. $\frac{x+1}{a} = \frac{x+3}{b} = \frac{x-3}{c}$

b. $\frac{1}{2}x - 3 = 0$

c. $\frac{2x}{3} - \frac{5x}{6} = 9$

IV. Radicali

\sqrt{x} ; $\sqrt[3]{21}$; $\sqrt{\sqrt{\sqrt{3}}}$; $\sqrt{a+b}$; $\sqrt{a^2+b^2}$

V. Sisteme

$$\begin{cases} x, & x > 0 \\ 1, & x < 0 \end{cases}; \begin{cases} a, & a > 0 \\ 0, & a = 0 \\ -a, & a < 0 \end{cases}; \begin{cases} \frac{1}{2}x + 3, & x < 0 \\ -3x + \sqrt{3}, & x < 0 \end{cases}; \begin{cases} \frac{x^2 - 3}{x}, & x < 0 \\ x^2 + 2x + 1, & x > 0 \end{cases}$$

VII. Integrale

$\int \frac{dx}{x}$; $\int x^n dx$; $\int a^x dx$; $\int_0^1 x^n (1-x)^n dx$; $\int_0^1 \frac{dx}{\sqrt{x}}$; $\int_{-1}^1 \frac{dx}{\sqrt{3-x}}$

VIII. Limite

$\lim_{n \rightarrow \infty} 1 \leq \lim_{n \rightarrow \infty} \frac{I_{2n}}{I_{2n+1}}$; $\lim_{\substack{x \rightarrow \alpha \\ x > \alpha}} (f(x) \cdot \sqrt{1 + (f'(x))^2})$:

IX. Determinanti

$\Delta = \begin{vmatrix} 1 & 2 \\ 3x & 4 \end{vmatrix}$; $\Delta = \begin{vmatrix} 1 & 2 & 3 \\ 4 & 5 & 6 \\ 7 & 8 & 9 \end{vmatrix}$;

Editati urmatoarele formule:

a. $f(x) = x^3 - 2x + 5, x \in \mathbb{R}$

b. $f(x) = x + \frac{5}{x^2}, x < 0$

c. $f(x) = 3x - \frac{2}{x} + \sqrt{x}, x < 0$

d. $f(x) = \frac{x-1}{x^3}, x < 0$

e. $f(x) = x - 3\sqrt[3]{x}, x \geq 0$

$$f. f(x) = \frac{(\sqrt{x-1})^2}{x}, x > 0$$

$$g. \frac{3}{2}x^2 - 2\ln x + \frac{2}{3}x\sqrt{x} = f(x)$$

$$h. \frac{2}{5}x^2\sqrt{x} - \frac{9}{4}x^3\sqrt{x} = f(x)$$

$$i. \int x^n dx = \frac{x^{n+1}}{n+1} + c$$

$$j. \int \frac{dx}{x} = \ln|x| + c = \begin{cases} \ln x, & x > 0 \\ \ln(-a), & x < 0 \end{cases} + c$$

$$k. \int a^x dx = \frac{a^x}{\ln a} + c$$

$$l. \int \frac{dx}{x^2 - a^2} = \frac{1}{2a} \ln \left| \frac{x-a}{x+a} \right| + c$$

$$m. \int \frac{dx}{\sqrt{a^2 + x^2}} = \frac{1}{a} \operatorname{arctg} \frac{x}{a} + c$$

$$n. \int \frac{dx}{\sqrt{a^2 - x^2}} = \arcsin \frac{x}{a} + c$$

$$o. g(x) = \begin{cases} e^x, & x \geq 0 \\ x+1, & x < 0 \end{cases}$$

$$p. G(x) = \begin{cases} e^x, & x \geq 0 \\ \frac{x^2}{2} + x + k_2, & x < 0 \end{cases}$$

$$q. g(x) = \begin{cases} 1, & x > 0 \\ 0, & x = 0 \\ -1, & x < 0 \end{cases}$$

$$r. g: \mathbb{R} \rightarrow \mathbb{R}, g(x) = \begin{cases} |x|, & x \in \mathcal{Q} \\ x^2, & x \in \mathbb{R} - \mathcal{Q} \end{cases}$$

$$s. h: \left[0, \frac{\pi}{2}\right] \rightarrow [0, 1], h(x) = \begin{cases} \sin x, & x \in \left[0, \frac{\pi}{2}\right] \cap \mathcal{Q} \\ \cos x, & x \in \left[0, \frac{\pi}{2}\right] \cap (\mathbb{R} - \mathcal{Q}) \end{cases}$$