LaTeX no MOODLE: Exercícios

Exercícios Propostos no texto de apoio LaTeX-Moodle:

Escreva as instruções LaTeX que produzem os seguintes resultados no MOODLE:

1. $3 \times 6 = 18 = \dfrac{36}{2} = \dfrac{1+1+\cdots+1+1}{2}$.

2. $\dfrac{\frac{2}{7}+\xi}{x-\frac{1}{\sigma}}$.

3. $\Sigma\omega\chi\rho\alpha\tau ov\varsigma$ foi um filósofo grego extremamente importante.

4. $\mathbb{N} \subset \mathbb{Z} \subset \mathbb{Q} \subset \mathbb{R} \subset \mathbb{C}$.

5. $\mathbb{C} \setminus \mathbb{R} \neq \emptyset$ (Nota: no membro esquerdo está uma operação binária sobre conjuntos).

6. $(f \circ g)(x) = f(g(x)), \forall x \in X$.

7. $(p \Rightarrow q) \iff ((\neg p) \vee q)$.

8. $x^{10^{-3}}$.

9. $\widehat{f-g}(x) \times h(\hat{y})$.

10. $\vec{F}_{2^n-1} - \vec{F}_{2^{n-1}}$.

11. $\underbrace{a+b+\overbrace{c+\cdots+x+y}^{23}+z}_{26}$.

12. $f'(x_0) = \lim\limits_{x \to x_0} \dfrac{f(x)-f(x_0)}{x-x_0}$.

13. $\zeta(z) = \dfrac{\Gamma(1-z)}{2\pi i} \oint_\gamma \dfrac{u^{z-1}}{e^{-u}-1} du$.

14. $\gamma = \lim \left(\sum\limits_{j=1}^{n} \dfrac{1}{j} - \ln n \right)$.

15. $\sum\limits_{j=1}^{\infty} \dfrac{1}{j^x} = \prod\limits_{p \in \{\text{primos}\}} \dfrac{1}{1-p^{-x}}$.

16. $(K \otimes L)_n = \bigoplus\limits_{p+q=n} K_p \otimes L_q$.

Mais Exercícios:

17. $z = \sqrt{\dfrac{1+\sqrt{2}}{2}} + \dfrac{1}{\sqrt{2}\sqrt{1+\sqrt{2}}}i.$

18. $\sqrt{\sqrt[4]{\dfrac{(x-1)^2}{5}}}.$

19. $e^{i(n-1)\frac{\theta}{2}} \cos\dfrac{n\theta}{2}.$

20. $\left.\dfrac{x}{x^2-1}\right|_b^a = \dfrac{a}{a^2-1} - \dfrac{b}{b^2-1}$

21. $\lim\limits_{n\to\infty} \sum\limits_{k=1}^{n} \dfrac{1}{k^2} = \dfrac{\pi^2}{6}$

22. $\max\limits_{j\notin I_B} \left\{ \dfrac{c_j - z_j}{x_{ij}} \,\middle|\, x_{ij} > 0 \right\} \leq \Delta c_i \leq \min\limits_{j\notin I_B} \left\{ \dfrac{c_j - z_j}{x_{ij}} \,\middle|\, x_{ij} < 0 \right\}$

23. $\displaystyle\int_0^1 \frac{x}{1-x^2}dx = -\frac{1}{2} \lim_{\epsilon\to 0^+} \left[\ln(1-x^2)\right]_0^{1-\epsilon}$

24. $\displaystyle\sum_{S\subseteq X} (-1)^{\#S} = \sum_{\substack{S\subseteq X \\ a\notin S}} (-1)^{\#S} + \sum_{\substack{S\subseteq X \\ a\in S}} (-1)^{\#S}.$

25. $\displaystyle a_n = \sum_{k=0}^{\lfloor \frac{n}{2} \rfloor} \binom{r}{k}\binom{r}{n-2k} = \sum_{k=0}^{\lfloor \frac{n}{2} \rfloor} \binom{r}{n-2k}\binom{r}{k} = \sum_{k=0}^{\lfloor \frac{n}{2} \rfloor} b_{n-2k}c_k.$

26. $\dfrac{1}{\overline{\lim}\ \sqrt[n]{\left|\frac{a_n}{n+1}\right|}} = \dfrac{1}{\overline{\lim}\ \sqrt[n]{\frac{1}{n+1}}\ \sqrt[n]{|a_n|}}$

27. $\begin{cases} y''' - 3y'' + 2y' = 0 \\ y(0) = 0 \\ y'(0) = 1 \\ y''(0) = -1 \end{cases}.$

28. $f(x) = \begin{cases} \frac{1}{2} & \text{se } x = 1 \\ 0 & \text{se } x \in [0, +\infty] \setminus \{1\} \end{cases}.$

29. $\begin{bmatrix} 1 & 0 & 2 \\ 2 & 1 & 0 \\ 0 & -1 & 1 \end{bmatrix} \underset{L_2-2L_1}{\longrightarrow} \begin{bmatrix} 1 & 0 & 2 \\ 0 & 1 & -4 \\ 0 & -1 & 1 \end{bmatrix}.$

30. $\begin{vmatrix} u_1 & u_2 & \dots & u_n \\ u_1' & u_2' & \dots & u_n' \\ \vdots & \vdots & & \vdots \\ u_1^{(n-1)} & u_2^{(n-1)} & \dots & u_n^{(n-1)} \end{vmatrix}.$