

Math Formulas Part 2

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1 Summation

Here is the formula to calculate the total Present using Annual Uniform

$$P_0 = \sum_{n=1}^m A \cdot \frac{1}{(1+i)^n}$$

2 Integral and Limit

Here is a famous math Integral

$$\int x^x dx$$

Here is a simple area integral

$$\iint x^x \cdot y^y dx dy$$

This is a famous integral

$$\frac{1}{2\pi i} = \oint_C f(x)$$

Here is a limit function

$$\lim_{\mathbf{x} \rightarrow \mathbf{c}} \mathbf{f}(\mathbf{x}) = L$$

Theorem 2.1 (Akrra-Bazzi). Akrra-Bazzi recursion problem

Here is the famous Akrra-Bazzi formula

$$T(n) = \Theta \left(n^p \cdot \left(1 + \int_1^n \frac{f(x)}{x^{p+1}} dx \right) \right)$$

Theorem 2.2 (Akrra-Bazzi). Akrra-Bazzi recursion problem

Here is the famous Akrra-Bazzi formula

$$T(n) = \Theta \left(n^p \cdot \left(1 + \int_1^n \frac{f(x)}{x^{p+1}} dx \right) \right)$$

Proof. I don't remember the proof lol !

□

3 Multi-Line Math formulas

Here is a multi-line math equation

$$\begin{aligned} y = & \\ & 2x + 2c + 4f \\ & + 4t + 9o \\ & - 2x + 2c + 4f \end{aligned} \tag{1}$$

Here is how Feynman's Trick works

$$I = \int_0^1 \ln(x) dx \tag{2}$$

$$I(a) = \int_0^1 \ln(ax) dx \tag{3}$$

$$I'(a) = \frac{\partial a}{\partial x} \int_0^1 \ln(ax) dx \tag{4}$$

Here is some famous functions

$$y = x^2 \qquad y = x^3 \tag{5}$$

$$y = 1/x \qquad y = \sqrt{x} \tag{6}$$

4 Matrix

$$A = \begin{vmatrix} 1 & 2 \\ 3 & 4 \end{vmatrix}$$

$$A^T = \begin{vmatrix} 1 & 3 \\ 2 & 4 \end{vmatrix}$$

5 Multi-Condition function

$$|x| = \begin{cases} x & \text{for } x > 0 \\ 0 & \text{for } x = 0 \\ -x & \text{for } x < 0 \end{cases}$$