

Activity 2.1

Jesús Carro

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1 First part

In-line mode: $a^2 = b^2 + c^2$. Display mode:

$$a^2 = b^2 + c^2$$

Now, a numbered equation:

$$a^2 = b^2 + c^2 \tag{1}$$

All is in the same paragraph for L^AT_EX.

2 Second part

Formula 1

$$\int_0^1 f(x) dx$$

Formula 2

$$A = \begin{pmatrix} 1 & 2 & 3 \\ 0 & 7 & c \\ a & -1 & b \end{pmatrix} \implies |A| = \begin{vmatrix} 1 & 2 & 3 \\ 0 & 7 & c \\ a & -1 & b \end{vmatrix}$$

Formula 3

$$\sum_{n=0}^{\infty} \frac{1+n^2}{n^3}$$

Formula 4

$$\prod_{k=1}^{\infty} \left(\sum_{n=0}^k \frac{1+n^2}{n^3} \right)$$

Formula 5

$$\binom{n}{k} = \frac{n!}{k!(n-k)!}$$

Formula 6 (Extra, with other character for matrices)

$$A_{M \times N} = \begin{pmatrix} a_{1,1} & a_{1,2} & \dots & a_{1,N} \\ a_{2,1} & a_{2,2} & \dots & a_{2,N} \\ \vdots & \vdots & \ddots & \vdots \\ a_{M,1} & a_{M,2} & \dots & a_{M,N} \end{pmatrix}$$

Formula 7 (Extra, with Greek characters)

$$\frac{df(t)}{dt} = \lim_{\delta \rightarrow 0} \frac{f(t + \delta) - f(t)}{\delta}$$

Formula 8 (Extra, with Greek characters)

$$f(x) = \begin{cases} 2 - \frac{\tan(x)}{x} & -\frac{\pi}{2} < x < 0 \\ 1 & x = 0 \\ \frac{\tan(x)}{x} & 0 < x < \frac{\pi}{2} \end{cases}$$

3 Tupper's self-referential formula (optional)

$$\frac{1}{2} < \left\lfloor \text{mod} \left(\left\lfloor \frac{y}{17}^{-17\lfloor x \rfloor - \text{mod}(\lfloor y \rfloor, 17)} \right\rfloor, 2 \right) \right\rfloor$$