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file <- “/home/jim/code/publish_project/MATH/100_math_examles.md”

PURPOSE: Collect examples of math/latex here: vectors, equations, align, symbols etc.

This is markdown file. Using print_pdf.sh % out.pdf pandoc will produce .pdf files with appropriate latex packages.

use of grave symbol:

``singlequote'`

`"doublequote"`

\mathbb{R}

in latex:

`$\$10.25$`

\$10.25

Let V be vector space and B be basis.

\vec{p}

dot product

`$$ \vec{p}\cdot\vec{q}=\|\vec{p}\|\|\vec{q}\|\cos\theta $$`

magnitude

$|\vec{a}|$

unit vector

$\hat{a} = \frac{\vec{a}}{|\vec{a}|}$

matrix:

$\begin{matrix} a & b \\ c & d \end{matrix}$

matrix with subscripts

$\begin{matrix} a_{11} & a_{12} \\ a_{21} & a_{22} \end{matrix}$

matrix with square brackets (bmatrix)

$\begin{bmatrix} 1 \\ 0 \\ 0 \end{bmatrix}$

(1)

matrix with dots ...

$\begin{bmatrix} a_1 \\ \vdots \\ a_n \end{bmatrix}$

(2)

$\begin{bmatrix} a_{11} & a_{12} & a_{13} \\ a_{21} & a_{22} & a_{23} \\ a_{31} & a_{32} & a_{33} \end{bmatrix}$

(3)

As we can see from eqn ~ (1) and ~ (3) ...

align equal signs

$$y = x^2 \tag{4}$$

$$z = y^2 \tag{5}$$

align left A

$$y = x^2 \tag{6}$$

$$z = y^2 \tag{7}$$

$$A = B = C \tag{8}$$

$$D = E = F \tag{9}$$

$$x - 1 = y \tag{10}$$

$$x = y + 1 \tag{11}$$

Still centered, but note alignment has changed.

$$x - 1 = y \tag{12}$$

$$x = y + 1 \tag{13}$$

inline

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

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

Independent Samples

$$\mu_{\bar{x}_1 - \bar{x}_2} = \mu_1 - \mu_2$$

$$\sigma_{\bar{x}_1 - \bar{x}_2}^2 = \frac{\sigma_1^2}{n_1} + \frac{\sigma_2^2}{n_2}$$

$$\mu_{\hat{p}_1 - \hat{p}_2} = p_1 - p_2$$

$$\sigma_{\hat{p}_1 - \hat{p}_2}^2 = \frac{p_1(1-p_1)}{n_1} + \frac{p_2(1-p_2)}{n_2}$$