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# 1 Essential

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\todo
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$$\binom{n}{k} = \frac{n!}{k!(n-k)!} \quad (1)$$

$$= \frac{1}{2\pi i} \oint_{\Gamma} \frac{(1+z)^n}{z^{k+1}} dz \quad (2)$$

Table 1: Caption

| A | $\mathbb{R}^1$ |
|---|----------------|
| a | b              |
| c | d              |
| e | f              |
| g | h              |

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\*thanks

†thanks

<sup>1</sup>footnotemark–footnotetext

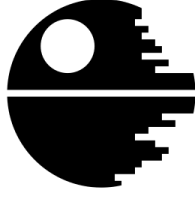
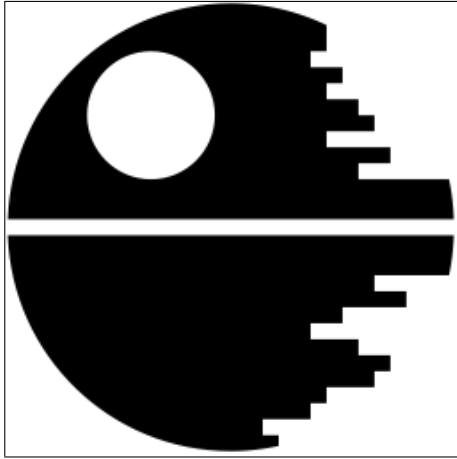


Figure 1: Caption

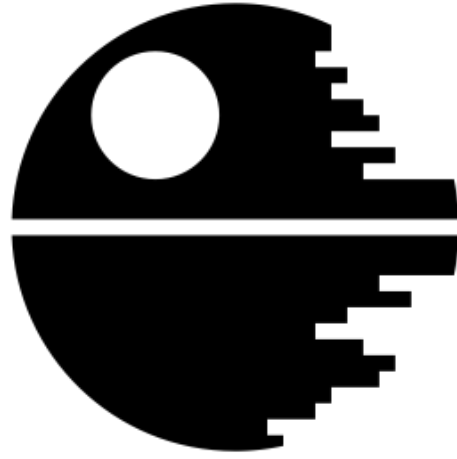
TensorFlow<sup>2</sup> (Abadi et al., 2016), Abadi et al. (2016).  
 Section 1 on a page 1, table 1, figure 1, equations (1) and (2).

## 2 Other CO<sub>2</sub>

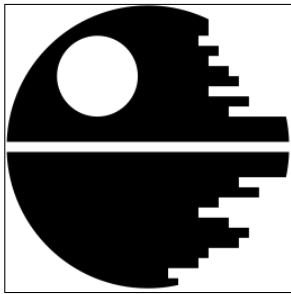
### Subfigures



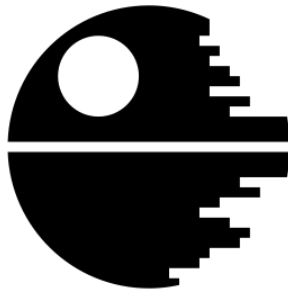
(a) Caption 1



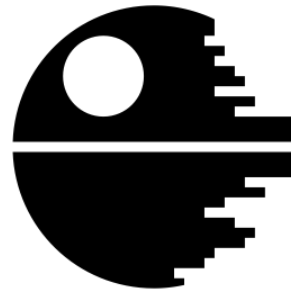
(b) Caption 2



(c) Caption 3



(d) Caption 4



(e) Caption 5

Figure 2: The caption. *Top*: top. *Bottom*: bottom.

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<sup>2</sup>footnote

**Proof**

The proof is easy and is left to a reader. □

**Test math**

$$\begin{array}{c} \sum_{\mu} \sum_{\mu} \mathbb{R}^{n \times m} \left\langle \frac{\Psi}{1} \middle| \middle| \frac{\Psi}{1} \right\rangle \left\langle \frac{\Psi}{1} \middle| \frac{\Psi}{1} \right\rangle \left\langle n \middle| \prod_k U_k \middle| \frac{x}{1} \right\rangle \left\langle n \middle| \prod_k U_k \middle| \frac{x}{1} \right\rangle \\ \text{Normal}(\mathbf{x} \mid \mu, \sigma^2) \\ \text{Normal}(\mathbf{x} \mid \mu, \sigma^2) \\ \text{Normal}(\mathbf{x} \mid \mu, \sigma^2) \\ Y \sim \text{U}[0,1] \propto \text{Beta}(a,b \;;\; c,d) \, \Gamma\left(x \left| \alpha + \sum_{k=0}^n \theta_k \right.\right) \mathcal{N}(\mathbf{x} \mid \mu, \sigma^2) \\ \sum_{n=-\infty}^{+\infty} f(x) \geqslant \geqslant \geqslant \text{med } X \\ \varepsilon + \mathrm{e}^{-\frac{(x-2)^2}{2\sigma^2}} + \text{const} \\ \dot{a} \varepsilon \phi \varphi \\ \not\propto \not\subset \not\subseteq \not\in \\ \equiv \doteq \approx \complement \supset \ni \parallel \neq \neq \\ \ln p = \text{Tr } A = \text{tr } A = \text{var } X = \text{KL}(P \parallel Q) = D_{\text{KL}}(P \parallel Q) \\ \star * \circ \bullet \oplus \otimes \odot \dagger \ddagger \S \\ \oplus \otimes \odot \cup \cap \\ \leftarrow \leftarrow \rightarrow \rightarrow \mapsto \leftarrow \Rightarrow \Longleftrightarrow \Longleftrightarrow \overrightarrow{AB} \rightrightarrows \\ \square \square \{ \} \langle \rangle \parallel \parallel \parallel \sqcup \parallel \\ \ell \emptyset \operatorname{Re} \operatorname{Im} \perp \top \angle \square \\ \sim \approx \smile \propto \dot{=} \ddot{=} \\ \hbar \square \blacksquare \star \emptyset \end{array}$$

$$\left\| \begin{smallmatrix} 1 & 2 \\ 3 & 4 \end{smallmatrix} \right\| = \left| \oint_A^B f(z) \, \mathrm{d} z \right| = \frac{\mathrm{d} u}{\mathrm{d} x} = \mathcal{F} \mathfrak{F} = \frac{\sum a_{ij}}{\sum b_{i\textit{big long thing}}} = \sum a_k = \frac{\mathbb{P}\left\{\frac{X}{\mathbb{E} X} \leqslant \varepsilon\right\}}{\Pr\{\text{Poisson}(\lambda = 3) > 5\}} \tag{3}$$

$$\partial \cdot \frac{\partial}{\partial x} \cdot \frac{\partial f}{\partial x} \cdot \frac{\partial^3 f}{\partial x^3} \cdot \frac{\partial}{\partial x} \frac{x^2+1}{x^3+1} \bigg|_{x=0} = \mathrm{d} \cdot \frac{\mathrm{d}}{\mathrm{d} x} \cdot \frac{\mathrm{d} f}{\mathrm{d} x} \cdot \frac{\mathrm{d}^3 f}{\mathrm{d} x^3} \cdot \frac{\mathrm{d}}{\mathrm{d} x} \frac{x^2+1}{x^3+1} \bigg|_{x=0} \tag{4}$$

$$\bar{a} \ A \overset{*}{\approx} B \quad \sum_{\substack{0 \leq i < n \\ j \neq i}} f(i) \quad \sqrt[3]{P(x)+Q(x)} \quad \frac{3}{8} \frac{3}{8} 3/8 \quad x = x \quad x = x \quad (5)$$

## Math fonts

|   |              |
|---|--------------|
| ABCDEFabcdef                                    | (mathrm)     |
| <b>ABCDEFabcdef</b>                             | (mathbf)     |
| ABCDEFabcdef                                    | (mathsf)     |
| ABCDEFabcdef                                    | (mathtt)     |
| <i>ABCDEFabcdef</i>                             | (mathit)     |
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| $\textit{ABCDEFabcdef}$                         | (mathnormal) |
| <b><i>ABCabcΓΩΞγωξ</i></b>                      | (boldsymbol) |
| $\mathscr{ABCDEF}$                              | (mathscr)    |
| $\frac{\mathfrak{ABCDEF}\S}{\mathfrak{abcdef}}$ | (mathfrak)   |
| ABCDEF\O\U\K\# \cancel{Z} \not\{                | (mathbb)     |
| ABCDEFabcdef12                                  | (mathbbm)    |

## Text fonts

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ABCDEFabcdef *ABCDEFabcdef*

## General formatting

- x y z
- “quote”
- Ph. D.
- Ph. D.
- Ph. D.
- A. B
- A. B
- yo␣wazup

## Semantic

RMSPROP ADAM **p**matrix (6)

$a \times \alpha$  **A A** (7)

NOT gate **CNOT** gate (8)

$\mathcal{X} \mathcal{Y} \mathcal{D}$  (9)

### 3 Bibliography

Abadi, M., Barham, P., Chen, J., Chen, Z., Davis, A., Dean, J., . . . Zheng, X. (2016). Tensorflow: A system for large-scale machine learning. In *12th USENIX symposium on operating systems design and implementation (OSDI 16)* (pp. 265–283). Savannah, GA: USENIX Association. Retrieved from <https://www.usenix.org/conference/osdi16/technical-sessions/presentation/abadi>