

math

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index

math on bookdown started on 2024/01/28

Part I

ordered by discipline

[math]

Chapter 1

test cross-link

```
1
link to partition
partition [#partition] (2) @ref(#partition)
equivalence class [#equivalence class] (@ref(equivalence class)) @ref(#equivalence class)
[equivalence-class] [#equivalence-class] (2) @ref(#equivalence-class)
[equivalence-class.html] [equivalence-class.html#equivalence-class] (@ref(equivalence-class.html))
@ref(equivalence-class.html#equivalence-class)
equivalence relation [#equivalence relation] (@ref(equivalence relation)) @ref(#equivalence relation)
[equivalence-relation] [#equivalence-relation] (2) @ref(#equivalence-relation)
[equivalence-relation.html] [equivalence-relation.html#equivalence-relation] (@ref(equivalence-
relation.html)) @ref(equivalence-relation.html#equivalence-relation)
noun1
https://stackoverflow.com/questions/48965247/use-csl-file-for-pdf-output-in-bookdown/49145699#49145699
citation 11 citation 21
citation 32 citation 42
```

¹This is a footnote.

mathematics

equivalence relation ²

equivalence class ₂

partition ₂

Part II

ordered by date

Chapter 2

ordered by date

partition

$$\{A_i | i \in I\} \text{ is a partition of a set } A \\ \Leftrightarrow \begin{cases} \forall i \in I (A_i \neq \emptyset) \\ A = \bigcup_{i \in I} A_i \\ \forall i, j \in I (i \neq j \Rightarrow A_i \cap A_j = \emptyset) \end{cases}$$

https://proofwiki.org/wiki/Definition:Set_Partition

202401281000

equivalence class

C is an equivalence class of a on A

$$\Leftrightarrow [a]_{\sim} = C = \left\{ x \mid \begin{cases} a \in A \\ x \in A \\ x \sim a \\ \sim \text{ is an equivalence relation over } A \times A = A^2 \end{cases} \right\} \subseteq A \neq \emptyset$$

$$\Leftrightarrow [a] = [a]_{\sim} = \left\{ x \mid \begin{cases} a \in A \\ x \in A \\ x \sim a \\ \sim \text{ is an equivalence relation on } A \end{cases} \right\} \subseteq A \neq \emptyset$$

$$\Rightarrow [a]_{\sim} = \{x \mid x \sim a\} \subseteq A \neq \emptyset$$

equivalence relation

等價關係 equivalence relation

$$\begin{aligned}
 &R \text{ is an equivalence relation over } A \times B \\
 \Leftrightarrow &\begin{cases} R = \sim = \{\langle x, y \rangle | x \sim y\} \subseteq A \times B & \text{(e) equivalence 等價} \\ \vdots & \vdots \end{cases} \\
 \Leftrightarrow &\begin{cases} R = \{\langle x, y \rangle | xRy\} \subseteq A \times B & (R) \text{ relation} \\ \forall \langle x, y \rangle \in R (xRx) & (r) \text{ reflexive} \\ \forall \langle x, y \rangle \in R (xRy \Rightarrow yRx) & (s) \text{ symmetric} \\ \forall \langle x, y \rangle, \langle y, z \rangle \in R \left(\begin{matrix} xRy \\ yRz \end{matrix} \Rightarrow xRz \right) & (t) \text{ transitive} \end{cases} \Leftrightarrow \begin{cases} R = \{\langle x, y \rangle | xRy\} \subseteq A \times B & \text{關係} \\ \forall \langle x, y \rangle \in R (\langle x, x \rangle \in R) & \text{自反} \\ \forall \langle x, y \rangle \in R (\langle y, x \rangle \in R) & \text{對稱} \\ \forall \langle x, y \rangle, \langle y, z \rangle \in R (\langle x, z \rangle \in R) & \text{遞移} \end{cases}
 \end{aligned}$$

1. [Bookdown books on the web: Downloading and converting to pdf - R Markdown.](#) *Posit Community* (2019).
2. ccjou. [二次型與正定矩陣](#). (2009).