



Eq. 10.10.10.10

$2 \in A$

$2 \in B$



$\{2\}$

— $\{2, 2\}$
↑
mistake

$\emptyset = \{\}$ \mathcal{P}

True
nonsense

nonsense

True
True
True

~~if $C = \{\}$ - wrong~~
~~then $x \notin C$ always true~~
 $\rightarrow C = \{\text{everything}\}$

~~$\emptyset, \{\emptyset, \dots\}$~~

3 + cow

$\{1, 2, \{1, 2, \{1, 2, \{1, 2, \dots\}\}\}\}$

Russell's Paradox

$$R = \{x \mid x \text{ is a set } \wedge x \notin x\}$$

Note: In the original image, "True" is written above "is a set" and below "x is a set". "False" is written above "x not in x". "True" is written below "x not in x".

$R \in R$ — True \rightarrow False

$R \in R$ — False \rightarrow True

{ | }
bundled
 \in Set

$$\{ \{x\} \mid x \in \mathbb{Z} \}$$

$$\{\{2, 3\}\}$$

^
v

$$\{ \underline{x} \mid \underline{x} \in \underline{\mathbb{Z}} \} = \{2, 3\} = \mathcal{P}(\mathbb{Z})$$

$$\{ \widehat{\{x\}} \mid x \in \mathbb{Z} \} =$$

$$\{ \underbrace{\{ \underbrace{\{ \underbrace{\{x\}} \}_{\text{blue}} \}_{\text{red}} \}_{\text{blue}} \mid x \in \mathbb{Z} \}$$

$$\{ \{ \underbrace{\{ \underbrace{\{ \underbrace{\{x\}} \}_{\text{blue}} \}_{\text{red}} \}_{\text{blue}} \}_{\text{green}} \}$$

$$\{ \{ \underbrace{\{ \underbrace{\{ \underbrace{\{ \underbrace{\{x\}} \}_{\text{blue}} \}_{\text{red}} \}_{\text{blue}} \}_{\text{green}} \}_{\text{red}} \}_{\text{blue}} \}$$