

Laten

$\Rightarrow \in \Rightarrow \setminus \text{in}$
 $\in \Rightarrow \setminus \text{not in}$

Empty set $\Rightarrow \{ \}$ or \emptyset

$\Rightarrow \setminus \{ \setminus \}$ on Latex

$\{ n \in \mathbb{R} \mid n^2 = 4 \}$ is same as $\{ n \in \mathbb{R} : n^2 = 4 \}$

① ① $\{ n^2 \mid n \in \mathbb{Z} \} = \{ 0, 1, 4, 9, \dots \}$

② $\{ n \in \mathbb{Z} \mid n^2 - 2 = 0 \} = \{ -\sqrt{2}, \sqrt{2} \}$

③ $\{ n \in \mathbb{R} \mid n^2 - 2 = 0 \} = \emptyset$ ←

④ $\{ n^2 \mid n \in [-3, 1] \} = [0, 9]$

⑤ $B = \{ n \in A \mid n < \frac{1}{2\pi} \}$ given that $A = \{ 1/n \mid n \in \mathbb{N} \}$

$\Rightarrow A = \{ 1, 1/2, 1/3, \dots \}$

$B = \{ 1/7, 1/8, 1/9, \dots \}$

$$(2) A = \{ \dots -8, -4, 0, 4, 8 \dots \}$$

$$B = \{ \dots -6, -3, 0, 3, 6 \dots \}$$

$$(a) A = \{ x \in \mathbb{Z} : 4x \} / \{ 4x \mid x \in \mathbb{Z} \}$$

$$B = \{ x \in \mathbb{Z} : 3x \} / \{ 3x \mid x \in \mathbb{Z} \}$$

$$(b) C = \{ x+y : x \in A, y \in B \}$$

$$C = \{ 4n+3y \mid n, y \in \mathbb{Z} \}$$

$$(c) 1 \in C, 2 \in C, 3 \in C \text{ \& } 5 \in C$$

So, C is a set of integers