

$$\mathbb{Q} \times \mathbb{C} = \{ (a, b) \mid a \in \mathbb{Q}, b \in \mathbb{C} \}$$

\uparrow format of elements \nwarrow "such that" \swarrow has properties

$$H = \{ \underbrace{\{ (x, a) \mid x \in \mathbb{R} \}}_{\text{element}} \mid a \in \mathbb{R} \} = \text{horizontal lines in the plane.}$$



$$H = \{ \{ (x, y) \in \mathbb{R}^2 \mid y = a \} \mid a \in \mathbb{R} \}$$

$$\{ (x, 4) \mid x \in \mathbb{R} \} \in H$$

$$\{ (x, y) \mid y = \frac{7}{3} \} \in H$$

$$\{ (x, 5) \mid x \in \mathbb{R} \}$$

$$(1, 2) \notin H$$

$$\{ \{ (x, a) \mid x \in \mathbb{R} \} \mid a = 1, 3, 5 \} \subseteq H$$