Number Types (Complex) - Description to Set Builder Definition - Real, Imaginary, and Complex Numbers

1

A number that includes a real part and an imaginary part (e.g., 3 + 4i).

Select the set definition that matches this description

A $\{a + bi \mid a, b \in \mathbb{R}\}$	B $\{x \mid x \in \mathbb{W}\}$
C $\{x \mid x \in \mathbb{R}\}$	D $\{a + bi \mid a, b \in \mathbb{R}, b \neq 0\}$

2

Any number that can be expressed as a fraction of two integers (e.g., 1/2, -3/4, 5).

Select the set definition that matches this description

A $\{a + bi \mid a, b \in \mathbb{R}, b \neq 0\}$	B $\{bi \mid b \in \mathbb{R}, b \neq 0\}$
C $\{a + bi \mid a, b \in \mathbb{R}\}$	D $\{x \mid x \in \mathbb{Q}\}$

3

A number that cannot be expressed as a simple fraction (e.g., √2, π).

Select the set definition that matches this description

A $\{x \mid x \in \mathbb{Q}\}$	B $\{x \mid x \in \mathbb{R}\}$
C $\{x \mid x \in \mathbb{R}, x \notin \mathbb{Q}\}$	D $\{bi \mid b \in \mathbb{R}, b \neq 0\}$

4

A number that can be expressed as a real number multiplied by the imaginary unit i (e.g., -2.5i).

Select the set definition that matches this description

A $\{x \mid x \in \mathbb{W}\}$	B $\{a + bi \mid a, b \in \mathbb{R}\}$
C $\{bi \mid b \in \mathbb{R}, b \neq 0\}$	D $\{x \mid x \in \mathbb{R}, x \notin \mathbb{Q}\}$

5

A number that has either/both a real and an imaginary part (e.g., 6, -7i, 3 + 4i).

Select the set definition that matches this description

A $\{x \mid x \in \mathbb{W}\}$	B $\{x \mid x \in \mathbb{N}\}$
C $\{a + bi \mid a, b \in \mathbb{R}, b \neq 0\}$	D $\{a + bi \mid a, b \in \mathbb{R}\}$

6

A positive integer (1, 2, 3, ...).

Select the set definition that matches this description

A $\{bi \mid b \in \mathbb{R}, b \neq 0\}$	B $\{x \mid x \in \mathbb{W}\}$
C $\{x \mid x \in \mathbb{Q}\}$	D $\{x \mid x \in \mathbb{N}\}$

7

Any number that can be found on the number line, including both rational and irrational numbers.

Select the set definition that matches this description

A $\{x \mid x \in \mathbb{R}\}$	B $\{x \mid x \in \mathbb{Q}\}$
C $\{x \mid x \in \mathbb{R}, x \notin \mathbb{Q}\}$	D $\{x \mid x \in \mathbb{W}\}$

8

A non-negative integer (0, 1, 2, 3, ...).

Select the set definition that matches this description

A $\{x \mid x \in \mathbb{W}\}$	B $\{x \mid x \in \mathbb{N}\}$
C $\{x \mid x \in \mathbb{Q}\}$	D $\{x \mid x \in \mathbb{R}, x \notin \mathbb{Q}\}$