



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

1 Select the description that matches this set definition $\{x \mid x \in \mathbb{Q}\}$

- | | |
|--|--|
| A A non-negative integer (0, 1, 2, 3, ...). | B Any number that can be found on the number line, including both rational and irrational |
| C A number that can be expressed as a real number multiplied by the imaginary unit | D Any number that can be expressed as a fraction of two integers (e.g. $1/2$, $-3/4$, 5) |

Select the description that matches this set definition $\{x \mid x \in \mathbb{W}\}$

- | | |
|---|--|
| A Any number that can be found on the number line, including both rational and irrational | B A number that has a real and an imaginary part (e.g. $3 + 4i$). |
| C A number that can be expressed as a real number multiplied by the imaginary unit | D A non-negative integer (0, 1, 2, 3, ...). |

3 Select the description that matches this set definition

$$\{x \mid x \in \mathbb{R}, x \notin \mathbb{Q}\}$$

- | | |
|---|--|
| A A number that can be expressed as a real number | B A number that cannot be expressed as a simple fraction |
| C Any number that can be found on the number line, including both rational and irrational | D Any number that can be expressed as a fraction of two integers |

4 Select the description that matches this set definition

$$\{a + bi \mid a, b \in \mathbb{R}\}$$

- | | |
|---|--|
| A A number that can be expressed as a real number | B A number that has a real and an imaginary part (e.g. $3 + 4i$). |
| C Any number that can be found on the number line, including both rational and irrational | D A number that cannot be expressed as a simple fraction |

5 Select the description that matches this set definition $\{x \mid x \in \mathbb{N}\}$

- | | |
|---|--|
| A A non-negative integer (0, 1, 2, 3, ...). | B A positive integer (1, 2, 3, ...). |
| C Any number that can be found on the number line, including both rational and irrational | D A number that cannot be expressed as a simple fraction (e.g. $\sqrt{2}$, π). |

6 Select the description that matches this set definition $\{x \mid x \in \mathbb{R}\}$

- | | |
|--|---|
| A Any number that can be expressed as a fraction of two integers (e.g. $1/2$, $-3/4$, 5) | B A number that has a real and an imaginary part (e.g. $3 + 4i$). |
| C A number that cannot be expressed as a simple fraction (e.g. $\sqrt{2}$, π). | D Any number that can be found on the number line, including both rational and irrational |

7 Select the description that matches this set definition $\{bi \mid b \in \mathbb{R}, b \neq 0\}$

- | | |
|--|--|
| A A non-negative integer (0, 1, 2, 3, ...). | B A number that cannot be expressed as a simple fraction (e.g. $\sqrt{2}$, π). |
| C A number that can be expressed as a real number multiplied by the imaginary unit | D A number that has a real and an imaginary part (e.g. $3 + 4i$). |