**Name** _____

**mobius**

**1**

Select the description that matches this set definition

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

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

**2**

Select the description that matches this set definition

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

| | |
|---|---|
| A  A number that has either/both a real and an imaginary part | B  A positive integer (1, 2, 3, ...) |
| C  Any number that can be expressed as a fraction of two | D  Any number that can be found on the number line, including |

**3**

Select the description that matches this set definition

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

| | |
|---|---|
| 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  Any number that can be expressed as a fraction of two integers (e.g., 1/2, -3/4, 5). | D  A number that includes a real part and an imaginary part (e.g., 3 + 4i). |

**4**

Select the description that matches this set definition

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

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

**5**

Select the description that matches this set definition

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

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

**6**

Select the description that matches this set definition

$$\{bi \mid b \in \mathbb{R}, b \neq 0\}$$

| | |
|---|---|
| A  A number that has either/both a real and an imaginary part (e.g., 6, -7i, 3 + 4i) | B  Any number that can be expressed as a fraction of two integers (e.g., 1/2, -3/4, 5) |
| C  A number that can be expressed as a real number multiplied by the imaginary unit | D  A number that cannot be expressed as a simple fraction (e.g., √2, π). |

**7**

Select the description that matches this set definition

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

| | |
|---|---|
| A  A number that cannot be expressed as a simple fraction | B  A number that has either/both a real and an imaginary part |
| C  A positive integer (1, 2, 3, ...) | D  A number that can be expressed as a real number |

**8**

Select the description that matches this set definition

$$\{a + bi \mid a, b \in \mathbb{R}, b \neq 0\}$$

| | |
|---|---|
| A  Any number that can be found on the number line, including | B  Any number that can be expressed as a fraction of two |
| C  A non-negative integer (0, 1, 2, 3, ...). | D  A number that includes a real part and an imaginary part |