

Number Type Classification - Complex Numbers - Intro

- 1 Classify this number as natural, whole, integer, rational, irrational, imaginary, or complex. Pick the narrowest definition that fits.

$$43i$$

- | | |
|---|-----------------------|
| A | Pure Imaginary Number |
| B | Whole Number |
| C | Natural Number |
| D | Real Number |

- 2 Select the number that is a whole number

Whole Number

- | | | | |
|---|------------------|---|---|
| A | $\frac{53i}{8}$ | B | 0 |
| C | $-\frac{10}{12}$ | | |

- 3 Select the description that matches a rational number

Rational Number

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

- 4 Select the narrowest description that matches this number type

$$\sqrt{41}$$

- | | |
|---|--|
| A | A number that can be expressed as a real number multiplied by the imaginary unit i (e.g., $-2.5i$). |
| B | A real number that cannot be expressed as a simple fraction (e.g., $\sqrt{2}$, π). |
| C | A non-negative integer (0, 1, 2, 3, ...). |
| D | Any number that can be expressed as a fraction of two integers (e.g., $1/2$, $-3/4$, 5). |

- 5 Select the number type that matches this description

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

- | | |
|---|-----------------------|
| A | Rational Number |
| B | Natural Number |
| C | Pure Imaginary Number |
| D | Irrational Number |

- 6 Select the number that is a natural number

Natural Number

- | | | | |
|---|-----------------|---|-----------------------|
| A | $-\frac{9}{3}$ | B | $\sqrt{\frac{36}{4}}$ |
| C | $-\frac{20}{3}$ | | |

- 7 Classify this number as natural, whole, integer, rational, irrational, imaginary, or complex. Pick the narrowest definition that fits.

$$\frac{\sqrt{11}}{3}$$

- | | |
|---|-------------------|
| A | Irrational Number |
| B | Natural Number |
| C | Whole Number |
| D | Rational Number |



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8 Select the number that matches this description

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

A $4 + 71i$

B $43i$

C $2 + 13i$

9 Select the description that matches a whole number

Whole Number

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

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 i (e.g., $-2.5i$).

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

10 Select the narrowest description that matches this number type

$$0.\overline{13}$$

A A real number that cannot be expressed as a simple fraction (e.g., $\sqrt{2}$, π).

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

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

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

11 Select the number type that matches this description

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

A Irrational Number

B Natural Number

12 Is this number a rational number (even if that's not it's narrowest type)?

Is 12 a rational number

A No

B Yes

13 Select the number that matches this description

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

A $\frac{\sqrt{2}i}{4}$

B $\sqrt{\frac{100}{4}}$

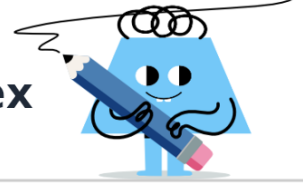
C $\frac{\sqrt{71}}{7}$

14 Is this number a complex number (even if that's not it's narrowest type)?

Is $\frac{\sqrt{47}}{9}$ a complex number

A No

B Yes



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15 Is a pure imaginary number also a rational number?

A Always

B Sometimes

C Never

16 Is a pure imaginary number also a complex number?

A Sometimes

B Always

C Never

17 Select the grouping that shows whole numbers

Whole Number



18 Select the number type that matches the highlighted grouping

A Irrational Number

B Whole Number

19 Select the narrowest grouping that matches this number type $53i$



20 Select the grouping that shows pure imaginary numbers

Pure Imaginary Number



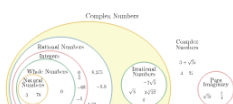
21 Select the description of the highlighted grouping

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

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

C A real number that cannot be expressed as a simple fraction (e.g., $\sqrt{2}$, π).

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

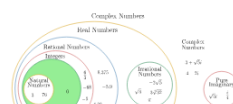


22 Select the number type that matches the highlighted grouping

A Whole Number

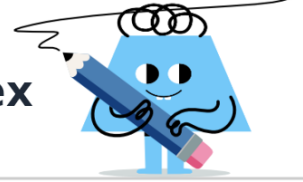
B Natural Number

C Irrational Number

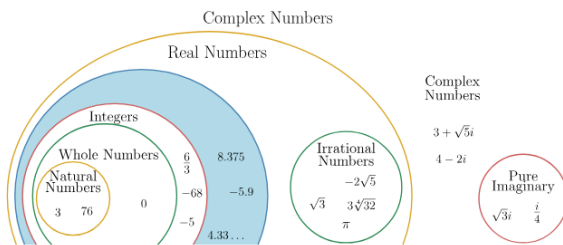




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23 Select the number that would go in this grouping



A

$$\sqrt{43}$$

B

$$-\frac{1}{3}$$

C

$$\frac{29i}{7}$$

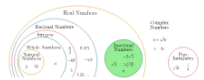
24 Select the grouping that matches this description

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

A



B



25 Select the narrowest groupin that matches this number type

$$\frac{\sqrt{19}}{9}$$

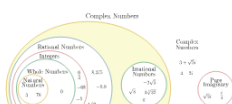
A



B



26 Select the description of the highlighted grouping



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

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

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

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

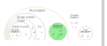
27 Select the grouping that matches this symbol

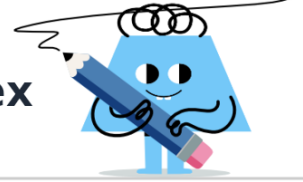
$\mathbb{Q}$

A



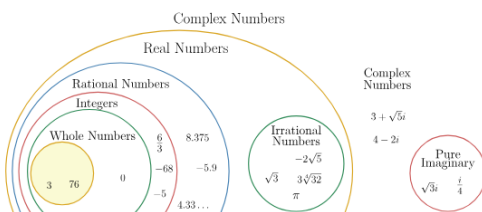
B





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28 Select the number that would go in this grouping



A

$$0.\overline{8}$$

B

$$\sqrt{79}i$$

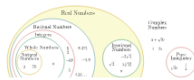
C

$$\frac{25}{5}$$

29 Select the grouping that matches this description

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

A



B



30 Select the symbol that matches the highlighted grouping

A $\mathbb{Q}$ B i C $\mathbb{R}$ D $\mathbb{N}$ 

31 Select the grouping that matches this symbol

 $\mathbb{W}$

A

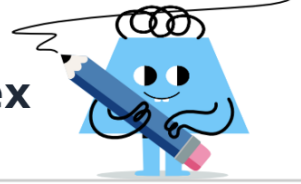


B



32 Select the symbol that matches the highlighted grouping

A $\mathbb{Q}$ B $\mathbb{W}$ C $\mathbb{R}$ D $\mathbb{N}$ 



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33 Select the symbol that means a pure imaginary number

Pure Imaginary Number

A	$\mathbb{Q}$	B	$\mathbb{N}$
C	$\mathbb{W}$	D	i

34 What type of number does this symbol represent

 i

A	Pure Imaginary Number
B	Natural Number
C	Real Number
D	Rational Number

35 Select the symbol representing the narrowest description that matches this number type

$$2 + \frac{41i}{9}$$

A	$\mathbb{Q}$	B	$\mathbb{C}$
C	$\mathbb{R}$	D	$\mathbb{W}$

36 Which number would be included in the type defined by this symbol

 $\mathbb{Q}$

A	$53i$	B	$-\frac{5}{6}$
C	$73i$		

37 Select the symbol that means a natural number

Natural Number

A	$\mathbb{N}$	B	$\mathbb{Q}$
C	$\mathbb{Q}'$	D	$\mathbb{W}$

38 What type of number does this symbol represent

 $\mathbb{C}$

A	Complex Number
B	Whole Number
C	Natural Number
D	Irrational Number

39 Select the description that matches this symbol

 $\mathbb{W}$

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

B A real number that cannot be expressed as a simple fraction (e.g., $\sqrt{2}$, π).

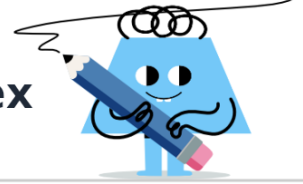
C A positive integer (1, 2, 3, ...).

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

40 Select the symbol representing the narrowest description that matches this number type

$$3 + \sqrt{3}i$$

A	$\mathbb{C}$	B	$\mathbb{R}$
C	$\mathbb{N}$	D	$\mathbb{Q}$



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41 Which number would be included in the type defined by this symbol

$\mathbb{N}$

A $-\frac{35}{7}$	B $\sqrt{\frac{80}{5}}$
C $4 + \frac{\sqrt{29}i}{8}$	

42 Select the description that matches this symbol

$\mathbb{W}$

- | | |
|---|--|
| A | A positive integer (1, 2, 3, ...). |
| B | A real number that cannot be expressed as a simple fraction (e.g., $\sqrt{2}$, π). |
| C | Any number that can be expressed as a fraction of two integers (e.g., $1/2$, $-3/4$, 5). |
| D | A non-negative integer (0, 1, 2, 3, ...). |

43 Select the symbol that matches this description

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

A $\mathbb{C}$	B $\mathbb{R}$
C $\mathbb{Q}'$	D $\mathbb{W}$

44 Select the symbol that matches this description

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

A $\mathbb{W}$	B $\mathbb{Q}'$
C $\mathbb{R}$	D $\mathbb{N}$

45 Select the set that means an irrational number

Irrational Number

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

46 What type of number does this set definition represent

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

A	Whole Number
B	Irrational Number
C	Real Number
D	Natural Number

47 Select the narrowest set definition that matches this number type

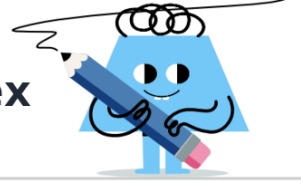
$-\frac{6}{9}$

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

48 Which number would be included in this set definition

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

A $29i$	B $\sqrt{67}$
C -23	



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49 Select the set that means a rational number

Rational Number

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

50 Select the description that matches this set definition

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

- 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 numbers.
- D A number that has a real and an imaginary part (e.g. 3 + 4i).

51 What type of number does this set definition represent

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

- A Rational Number
- B Irrational Number
- C Natural Number
- D Whole Number

53 Select the set definition that matches this description

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

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

52 Select the narrowest set definition that matches this number type

$$\frac{25}{5}$$

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

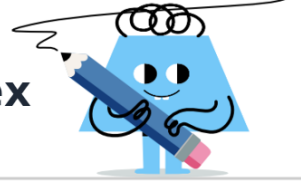
54 Which number would be included in this set definition

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

- A $\frac{\sqrt{59}}{4}$
- B $\frac{0}{5}$
- C $\frac{0}{11}$

55 Select the description that matches this set definition

- A A positive integer (1, 2, 3, ...).
- B A number that has a real and an imaginary part (e.g. 3 + 4i).
- C Any number that can be expressed as a fraction of two integers (e.g., 1/2, -3/4, 5).
- D A number that can be expressed as a real number multiplied by the imaginary unit i (e.g., -2.5i).



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56 Select the set definition that matches this description

A real number that cannot be expressed as a simple fraction (e.g., $\sqrt{2}$, π).

- | | |
|---|--|
| A | $\{x \mid x \in \mathbb{Q}\}$ |
| B | $\{x \mid x \in \mathbb{R}, x \notin \mathbb{Q}\}$ |
| C | $\{x \mid x \in \mathbb{N}\}$ |
| D | $\{a + bi \mid a, b \in \mathbb{R}\}$ |

57 Is this number part of this set (even if that's not it's narrowest type)?

$$\frac{8}{9}$$

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

A

Yes

B

No

58 Is this number part of this set (even if that's not it's narrowest type)?

$$\frac{0}{4}$$

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

A

Yes

B

No