

Rational

Integers

Whole

Natural

-5

0

54

3

-1,369,698

-4.5

3.222

0.667

$\frac{1}{3}$

$\frac{1}{3}$



1 For each value, check all of the number sets to which it belongs.

Number	Natural Number	Whole Number	Integer	Rational Number
3	✓	✓	✓	✓
3.222				✓
0		✓	✓	✓
-4.5				✓
$-\frac{3}{5}$				✓
54	✓	✓	✓	✓
-5			✓	✓
$\frac{23}{3}$				✓
0.667				✓
-1,364,698			✓	✓

2 Complete the table with the missing examples and descriptions.

	Natural Numbers	Whole Numbers	Integers	Rational Numbers
Examples	{1, 2, 3, ...}	{0, 1, 2, ...}	{..., -3, -2, -1, 0, 1, 2, 3, ...}	$\{\frac{1}{2}, 0.35, 5, \dots\}$
Description	Counting numbers	Natural numbers and 0	Whole numbers with their opposites	Numbers that can be written as a fraction



Density

HABITS OF MIND

- *Be precise.*

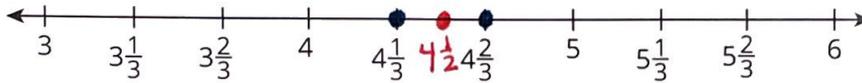
The set of rational numbers has different properties that are not true for natural numbers, whole numbers, or integers. The **Density Property** states that between any two rational numbers is another rational number.

- 1 Plot the given rational numbers. Then plot and label a rational number between each pair of rational numbers.

(a) $4\frac{1}{3}$ and $4\frac{2}{3}$

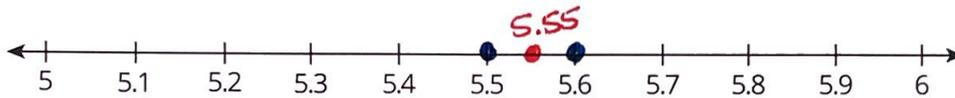
$$4\frac{2}{6} \quad 4\frac{3}{6} \quad 4\frac{4}{6}$$

$$4\frac{1}{2}$$



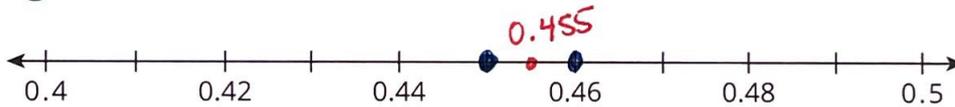
(b) 5.5 and 5.6

$$5.50 \quad 5.55 \quad 5.60$$



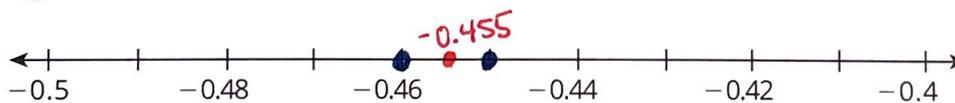
(c) 0.45 and 0.46

$$0.450 \quad 0.455 \quad 0.460$$



(d) -0.45 and -0.46

$$-0.450 \quad -0.455 \quad -0.460$$



- 2 How many numbers are between any two rational numbers?

There is an infinite number of rationals between any two rational numbers.