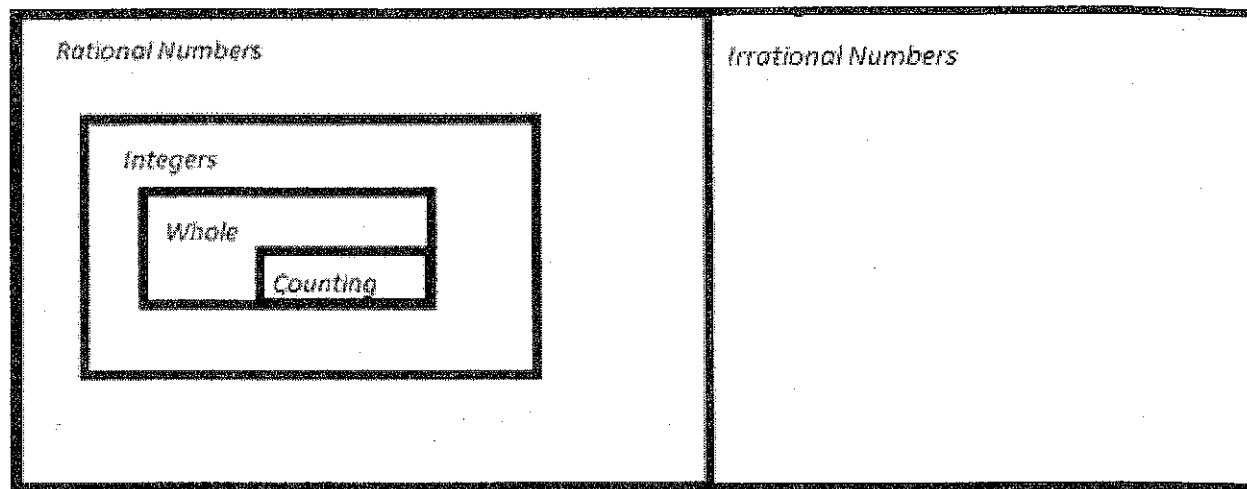


Name _____
Date 9/11

Class Notes IB

The Real Number System



Counting Numbers: Natural Numbers

1, 2, 3, 4, ...

Whole Numbers: Counting Numbers

Integers: Positive, Negative Numbers
No decimal

..., -2, -1, 0, 1, 2, ...

Rational Numbers: Can be fractions or
decimals

6, -1, 0, 1738

$\frac{1}{2}$, $-\frac{3}{4}$, .25, -.63

$\frac{a}{b}$, where $b \neq 0$

Irrational Numbers: Non-terminating
Non-repeating

π , $\sqrt{3}$, 3π , $\sqrt{17}$

Imaginary Numbers:

$\sqrt{-4}$, $\sqrt{-81}$

a) Which of the following is not a rational number? (A positive, negative, terminating or repeating decimal)

1) -12

2) $\sqrt{49} = 7$

3) $7.989898\overline{98} \dots$

4) $\sqrt{24} = 4.898979\dots$
not a perfect square

b) Which of the following is an integer? (positive, negative, zero, NO DECIMALS)

1) $\frac{17}{38}$ - decimal

2) 16.5 - decimal

3) $\frac{27}{-9} = -3$

4) π - irrational

$\frac{27}{-9}$ is an integer because $= -3$

c) Which of the following is a rational number but not a whole number?

A rational # has terminating or repeating decimals

1) $\frac{75}{10} = 7.5$

2) 92

3) $10.547964\dots$
irrational

4) $\sqrt{196} = 14$

d) Abigail is conducting a study to see how many cars drive through her neighborhood during a specified time interval. Which classification of numbers would be best used in this study?

1) whole numbers

2) irrational numbers - decimal values non-terminating, non-repeating

3) integers -
includes
negative

4) natural numbers - does not include zero