Chapter 9.2

Summary of definitions of sets of numbers used in grades 1 – 8

[The final exam will include questions about this information.
Also see the worksheet in module 9.]

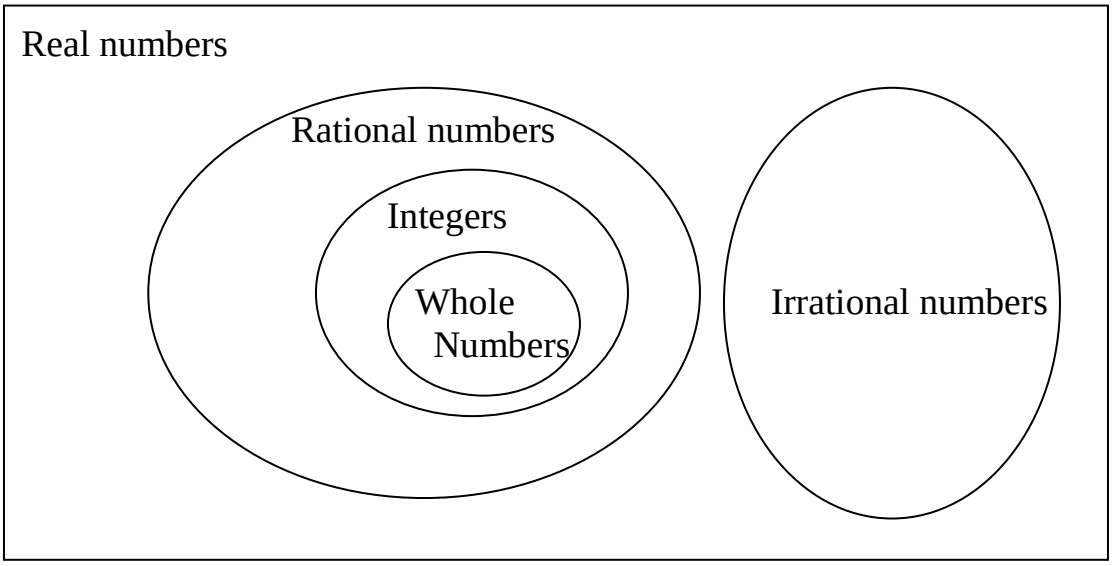
Whole numbers = { 0, 1, 2, 3, 4, 5, 6, . . . }

Integers = { . . . , -3, -2, -1, 0, 1, 2, 3, 4, 5, 6, . . . }
= All whole numbers and their negatives.

Rational numbers = $\{ \frac{a}{b} \mid a, b \in Integers,\ b \neq 0 \}$
= the ratio of two integers, with the denominator not zero
= terminating decimals or infinite, repeating decimals

Irrational numbers = numbers that cannot be written as the ratio of two integers
= infinite, non-repeating decimals

Real numbers = The set that contains all of the numbers above.
The set of real numbers completely fills in a number line.



1. Please put examples of numbers that would be in each set.
For example, 5 would be in Whole Numbers; -7/2 would be in Rational Numbers.
(See also the examples online in the links to 6th & 8th grade textbook pages.)

2. Consider which sets are closed for addition and multiplication.

3. Which sets are closed for subtraction?

4. Which sets are closed for division?