

MAT 1510: Calculus II

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Numbers

Work with a classmate. This does not need to be turned in.

Part 1: For each of the following sets of numbers, give a definition (as best as you can), give an example of a number in that set, and give an example of a number that is not in that set.

1. \mathbb{Z} , the integers

2. \mathbb{Q} , rational numbers

3. Irrational numbers

Part 2: After our class discussion, fill in the following statements:

1. The set \mathbb{Z} of integers is closed under _____ and _____, but not _____.
2. The set \mathbb{Q} of all rational numbers is the set of all numbers which can be expressed as _____.
3. For example, the number 0.25 is rational because it can be expressed as _____.
4. Rational numbers are closed under _____, _____, and _____.
5. Real numbers (\mathbb{R}) are the set of all _____ and _____ numbers.
6. Real numbers are closed under _____, _____, and _____.
(same as the rational numbers)

Part 3: Discuss the following with a classmate:

Rational numbers can be formed from integers by closing under _____. How do we form real numbers from rational numbers? What are we closing under?