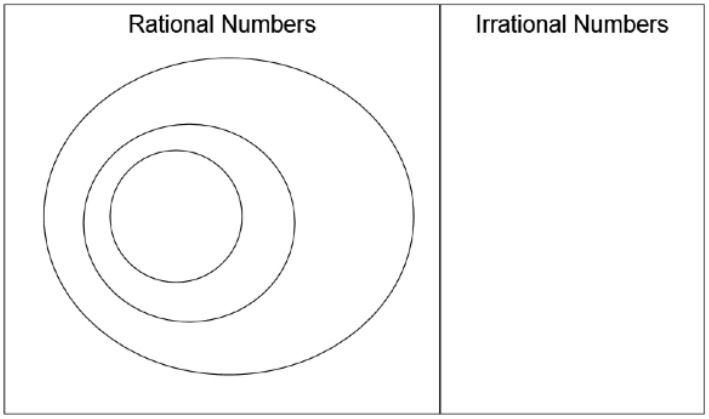
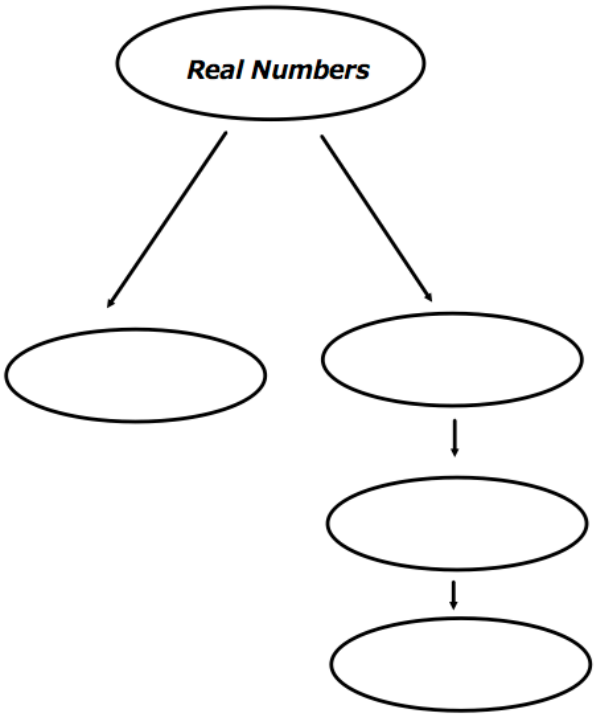
Name: _____ Date: _____ **Unit 1 Homework**

Exploring Numbers Homework

1. *Choose any one of the graphic organizers below. Copy it into your notebook, and complete it by filling in the words rational, irrational, whole, natural, and/or integer where appropriate.*





2. *Name the set(s) to which each real number belongs. (rational, irrational, integer, whole, natural)*

a. -99 b. 1.83 c. √2 d. √9

e. π f. 21 g. 0

3. *Write any number that meets each classification:*

a. rational, but not a whole number b. integer, but not natural

4. *What types of numbers are best to use for each variable?*
(rational, irrational, integers, whole) ***Support your answer.*** ☺

a. Your shoe size, s, at any point in your life b. How many followers, f, you have on Instagram

c. The cost, c, of your dream vacation d. The exact circumference, C, of a circular field.

5. Kyle claims that all natural numbers must be whole numbers. John states that all integers must be whole numbers. Who do you agree with, and why?

6. True or false: The number .22222… is irrational. Explain your answer.

7. Is the statement always, sometimes, or never true? Explain. "A natural number is whole."

8. Fill in the missing side of each equation with an equivalent expression.
Then state which property you used on the line below the equation.

a. 44 * 99 * 3 = _____ b. _____ = 15 + (23 + 28)

c. 787 * 1 = _____ d. 45 + 54 + 31 + 198 = _____

e. _____ = (15 * 8) * 13 f. _____ = 505 + 0

9. Provide any example of the inverse property of multiplication.

Selected Solutions

2. a. rational, integer
   e. irrational
   c. irrational
   g. rational, integer, whole

3. a. any fraction or ending decimal or repeating decimal; ex. ¼, -3.429, 5

4. b. Whole numbers because you can only have zero or more followers. It is not possible to have a negative number of followers or a fraction of a person as a follower.

d. Irrational numbers because the formula for circumference of a circle is pi times the diameter. Pi is irrational since it never ends and never repeats, so any number multiplied by pi will also be irrational

5. I agree with Kyle. All natural counting numbers (1, 2, 3, 4, …) are within the set of whole numbers. (0, 1, 2, 3, …) Also, John is incorrect because -2 is an integer, but not a whole number. (reasons/justifications will vary).

8. Answers may vary.
a. 3 * 99 * 44; commutative property of multiplication
c. 787; identity property of multiplication
e. 15 * (8 * 13); associative property of multiplication

9. Example: 3* 1/3 = 1