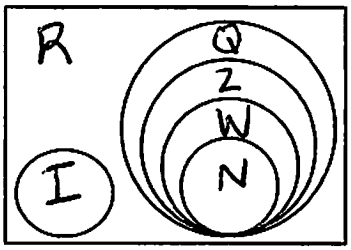
Name: Key	Date:
Topic: Real Numbers & Properties	Class:

Main Ideas/Questions	Notes
Real Numbers (R)	The **Real Numbers** consist of the following sets of numbers: • **Irrational Numbers:** Numbers in which the decimal form never terminates and does not repeat. Common examples are π and non-perfect square roots. • **Rational Numbers:** Numbers in which the decimal form either terminates or repeats. Rational numbers can always be written as a **fraction** (a/b) where a and b are integers. **Subsets of Rational Numbers:** o **Integers:** {-3, -2, -1, 0, 1, 2, 3, ...} o **Whole Numbers:** {0, 1, 2, 3, 4, ...} o **Natural Numbers:** {1, 2, 3, 4, 5, ...}

Organizing the Real Numbers



Set	Letter	Examples
Irrational Numbers	I	$\pi, \sqrt{5}, \sqrt{72}, \sqrt{41}$
Rational Numbers	Q	$0.34, 1\frac{5}{8}, 0.\overline{2}, -\frac{7}{11}$
Integers	Z	$7, -\sqrt{100}, 0, \frac{8}{4}$
Whole Numbers	W	$0, \frac{20}{4}, \sqrt{16}, 90$
Natural Numbers	N	$10, 47, \sqrt{9}, \frac{34}{2}$

Practice! Name all sets to which each value belongs.

1. -10 R, Q, Z	**2.** $\sqrt{30}$ R, I	**3.** $1\frac{7}{9}$ R, Q
4. $\frac{24}{8} = 3$ R, Q, Z, W, N	**5.** 2.48 R, Q	**6.** $-\sqrt{81} = -9$ R, Q, Z
7. $\pi - \pi = 0$ R, Q, Z, W	**8.** $\sqrt{\frac{16}{25}} = \frac{4}{5}$ R, Q	**9.** $0.\overline{15}$ R, Q
10. 109 R, Q, Z, W, N	**11.** $-\frac{8}{3}$ R, Q	**12.** $\frac{\sqrt{7}}{\sqrt{7}} = 1$ R, Q, Z, W, N