

## Math 9

Name: \_\_\_\_\_

### 3.1 – What is a Rational Number?

Date: \_\_\_\_\_

**Ex. 1:** Convert the following decimals to fractions, in simplified form:

- a. 0.7                      b. 10.25                      c.  $0.\overline{3}$                       d.  $8.\overline{5}$                       e.  $2.\overline{18}$

**Ex. 2:** Convert the following fractions to decimals:

- a.  $\frac{3}{10}$                       b.  $\frac{125}{100}$                       c.  $\frac{5}{9}$                       d.  $3\frac{2}{7}$                       e.  $-2\frac{3}{5}$

**Ex. 3:** Determine the values of the following quotients. What do you notice?

- a.  $\frac{-2}{10}$                       b.  $\frac{2}{-20}$                       c.  $-\frac{2}{20}$

A **Rational Number** is any number that can be written as a **FRACTION**, like:  $\frac{m}{n}$  where,  
 $m$  and  $n$  are both **integers** and  $n \neq 0$

Are the following numbers Rational Numbers or not?

**Integers and Fractions**

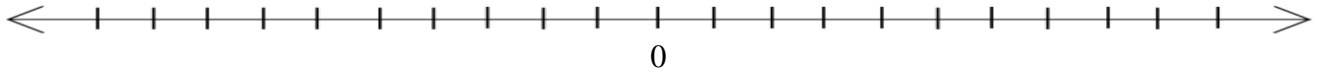
**Terminating Decimals**

**Repeating Decimals**

|                |      |                   |                    |
|----------------|------|-------------------|--------------------|
| 4              | 0.9  | $0.\overline{3}$  | $0.\overline{1}$   |
| -3             | 0.45 | $0.\overline{38}$ | $0.\overline{108}$ |
| $2\frac{3}{5}$ | 4.3  | $1.\overline{4}$  |                    |

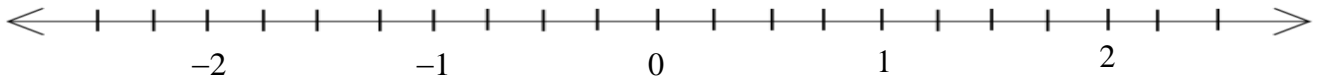
Numbers that can **not** be written in fraction form are called \_\_\_\_\_

Label the number line below using **INTEGERS**:



For every **POSITIVE INTEGER**, there is a corresponding \_\_\_\_\_

Label the number line below using **FRACTIONS**:



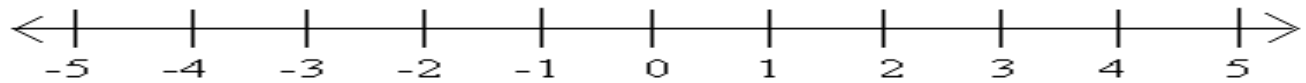
For every **POSITIVE FRACTION**, there is a corresponding \_\_\_\_\_

Since every fraction can be written as a decimal,

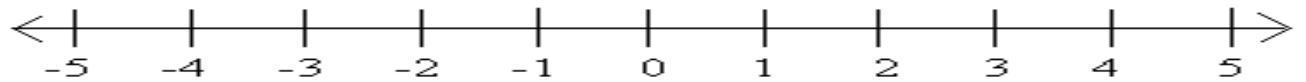
For every **POSITIVE DECIMAL**, there is a corresponding \_\_\_\_\_

**Ex. 4:** Graph the following Rational Numbers on the number line:

a.  $0.35$ ,  $2.5$ ,  $-0.6$ ,  $1.7$ ,  $-3.2$ ,  $-0.\overline{6}$



b.  $-\frac{3}{8}$ ,  $\frac{5}{9}$ ,  $-\frac{10}{4}$ ,  $-1\frac{1}{4}$ ,  $\frac{7}{10}$ ,  $\frac{8}{3}$

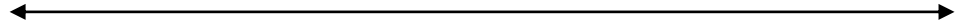


**Ex. 5:** Write 3 rational numbers between each pair of numbers and graph on a number line:

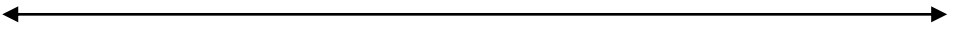
a. 1.25 and -3.26



b. -0.25 and -0.26



c.  $-\frac{1}{2}$  and  $\frac{1}{4}$



d.  $-\frac{1}{2}$  and  $-\frac{1}{4}$



**Ex. 6:** Order the following numbers from **least** to **greatest**:  $0.65, 2.8, -0.7, -3.24, -0.\overline{7}$

**Ex. 7:** Order the following numbers from **greatest** to **least**:  $-\frac{3}{8}, \frac{5}{9}, \frac{10}{-4}, -1\frac{1}{4}, \frac{7}{10}, \frac{8}{3}$