

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

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

**Math 9 Section 3.1 What are Rational Numbers?**

1. Given each of the following numbers below, indicate whether if it is a Rational or Irrational Number:

a) $\frac{5}{3}$	b) 0	c) $\frac{\sqrt{4}}{6}$	d) $\frac{-100}{101}$	e) $\pi$	f) $\frac{\sqrt{65}}{20}$
g) $4\sqrt{3}$	h) 21	i) $\frac{2}{3} + \frac{4}{3}$	j) $9^3$	k) $0.\overline{35}$	l) $12.\overline{5}$
m) $\frac{2+\sqrt{3}}{4}$	n) $\frac{4+\sqrt{9}}{7}$	o) $1.\overline{111}$	p) 1.1213141516...	q) 3.12112111211112...	r) $1.\overline{428571}$

2. For each of the following rational numbers, draw it on a number line:

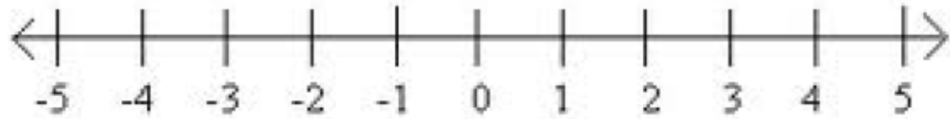
a) $3\frac{2}{5}$	b) $4\frac{1}{6}$	c) $-2\frac{1}{4}$
d) $1\frac{7}{9}$	e) $11\frac{10}{30}$	f) $7\frac{8}{24}$

3. Indicate whether if each of the following statements is either TRUE or FALSE:

- i) All rational numbers can be written as a fraction except when the denominator is a prime number:
- ii) All rational numbers must be in a form where the decimal form terminates
- iii) The square root of any number that is not a perfect square is irrational
- iv) All whole numbers are rational numbers
- vii) The product of two irrational numbers can be rational
- vi) The product of two irrational numbers will always be rational
- vii) The sum of a rational number and an irrational number will be irrational
- viii) An integer divided by another integer will always be rational

4. Place each of the following rational numbers on the number line:

a) $\frac{13}{4}$	b) $\frac{-16}{5}$	c) $\frac{\sqrt{9}}{2}$	d) 1.9090	e) $1.\overline{777}$	f) $-2.\overline{999}$	g) $3\frac{2}{5}$
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5. Arrange each of the following rational numbers from LEAST to GREATEST:

a)  $2.09$ ,  $\frac{5}{2}$ ,  $2.0909$ ,  $2\frac{1}{10}$ ,  $2.00999$

b)  $\frac{7}{2}$ ,  $\frac{9}{3}$ ,  $\frac{11}{4}$ ,  $\frac{13}{5}$ ,  $\frac{15}{6}$

c)  $\frac{2}{3}$ ,  $\frac{3}{4}$ ,  $\frac{8}{9}$ ,  $\frac{33}{36}$ ,  $\frac{11}{12}$

d)  $-\frac{7}{2}$ ,  $-3.\overline{999}$ ,  $-\frac{3}{7}$ ,  $\frac{8}{10}$ ,  $\frac{4}{5}$

e)  $4.09$ ,  $4.\overline{09}$ ,  $4.\overline{090}$ ,  $4.099$ ,  $4.1$

6. Given the list of numbers below, indicate which of them are equal to each other:

$$\sqrt{9}, \frac{3}{4}, \sqrt{\frac{9}{16}}, \frac{12}{4}, \frac{75}{100}, \frac{\sqrt{45}}{5}, 3^{-1}, \left(\frac{1}{3}\right)^{-1}, \left(1\frac{1}{3}\right)^{-1}$$

7. The value of  $0.\overline{1} + 0.\overline{12} + 0.\overline{123}$  is:

(A)  $0.\overline{343}$

(B)  $0.\overline{355}$

(C)  $0.3\overline{5}$

(D)  $0.\overline{355446}$

(E)  $0.\overline{355445}$