

HW SOL 3.1

October 31, 2018 8:50 AM

Name: Key

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

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) $7\frac{8}{24}$

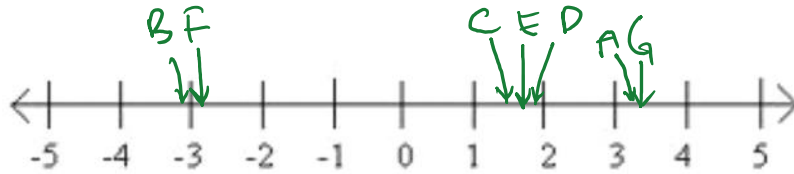
3. Indicate whether if each of the following statements is either TRUE or FALSE:

- i) All rational numbers can be written as a fraction except when the denominator is a prime number: **F (No exception)**
- ii) All rational numbers must be in a form where the decimal form terminates **F**
- iii) The square root of any number that is not a perfect square is irrational **T**
- iv) All whole numbers are rational numbers **T**
- vii) The product of two irrational numbers can be rational **T**
- vi) The product of two irrational numbers will always be rational **F**
- vii) The sum of a rational number and an irrational number will be irrational **T**
- viii) An integer divided by another integer will always be rational **T**

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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 , $2\frac{1}{10}$, 2.0099

2.09 , 2.5 , 2.0909 , 2.1 , 2.0099
 (2) (5) (3) (4) (1)

b) $\frac{7}{2}$, $\frac{9}{3}$, $\frac{11}{4}$, $\frac{13}{5}$, $\frac{15}{6}$
 3.5 , 3 , 2.75 , 2.6 , 2.5
 (5) (4) (3) (2) (1)

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

$\frac{24}{36}$, $\frac{27}{36}$, $\frac{32}{36}$, $\frac{33}{36}$, $\frac{33}{36}$
 (1) (2) (3) (4) (4)

d) $-\frac{7}{2}$, $-3.\overline{999}$, $-\frac{3}{7}$, $\frac{8}{10}$, $\frac{4}{5}$
 -3.5 , -4 , -0.428571 , 0.8 , 0.8
 (2) (1) (3) (4) (4)

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

4.09 , $4.\overline{0909}$, $4.\overline{090090}$, 4.099 , 4.1
 (3) (2) (1) (4) (5)

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} , $(\frac{1}{3})^{-1}$, $(\frac{1}{3})^{-1}$
 3 , $\frac{3}{4}$, $\frac{3}{4}$, 3 , $\frac{3}{4}$, $\frac{3\sqrt{5}}{5}$, $\frac{1}{3}$, 3 , $\frac{3}{4}$

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

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

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

(C) $0.\overline{35}$

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

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

wz

0.111111

0.121212

0.123123

0.355446