Chapter 3 Rational Numbers

$$\frac{1}{8} \qquad 60\% \qquad 0.222...$$

$$0.08\overline{3} \qquad \frac{3}{4}$$

$$37.5\% \qquad 0.05$$

$$\frac{2}{3} \qquad 25\%$$

Fractional, Decimal & Percent Equivalents

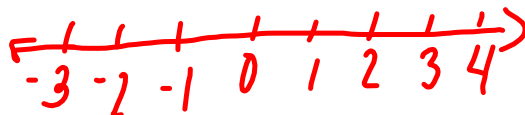# What is a rational number???

Natural Numbers...

start counting at 1.

Whole Numbers....

start with zero (o) and include all natural numbers
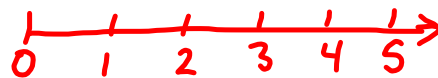
Integers....

A whole number and its opposite

Rational Number

[fraction]

- Any number that can be written in the form $\underline{m}$
   n

  where m and n are integers and n ≠ 0

  denominator

  - Rational numbers will terminate [stop] or

    ## repeat
    .

  Irrational Number

  * Cannot be written as a fraction
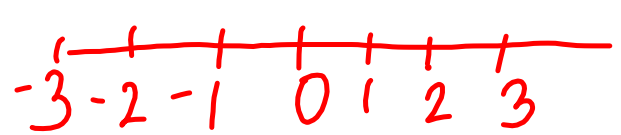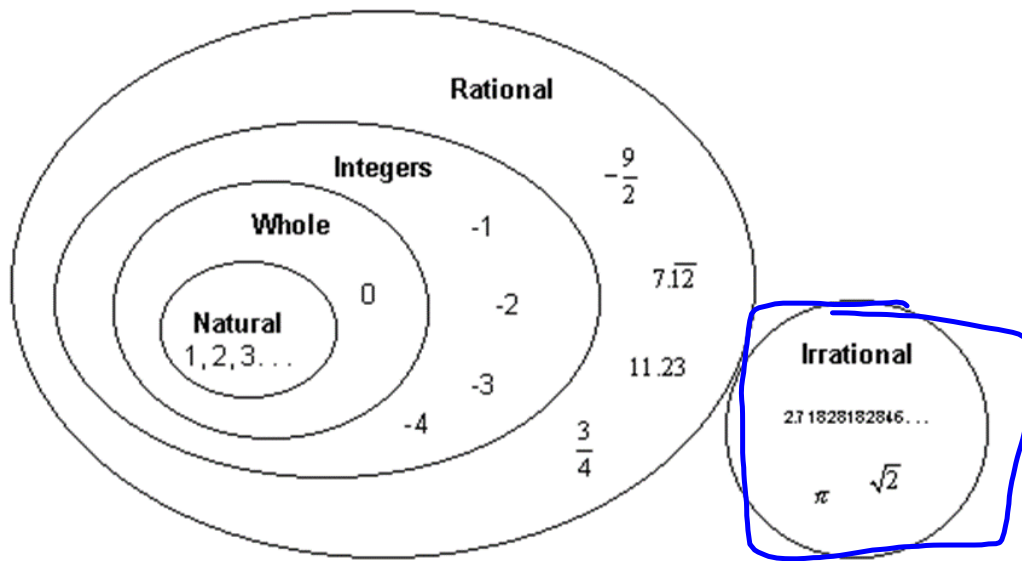 ⚹ Do not terminate and do not repeat.

Warm-Up   September 8,2016

Natural	Whole	Integers	Rational	**Irrational**
1,2,3...	0,1,2...	x never have decimals	[stop or repeat]	[does not repeat, does not stop]

A. 1.5

B. $\frac{-1}{7}$

$= 0.142857...$

C. 75

D. -7

E. $\sqrt{3}$

$1,73205...$

-3 -2 -1 0 1 2 3

4

Plicker Card...

Rational

Integers

Whole

Natural
1,2,3…

0

-1

-2

-3

-4

$-\dfrac{9}{2}$

$7.\overline{12}$

11.23

$\dfrac{3}{4}$

Irrational

2.7 1828182846…

π　$\sqrt{2}$
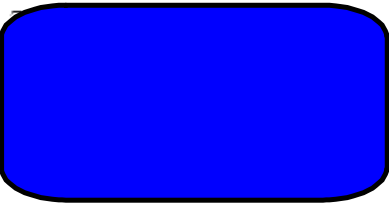
<u>Directions</u>: Tell what group [or groups] of numbers each of the following belong to:

1. 0.36
Rational

2. 0.36363636363636...
Rational

3. $0.\overline{36}$ **Rational**

4. -51 **Rational, Integer**

5. $\sqrt{8}$ **2.8284....** **Irrational**

6. $-\frac{3}{8}$ **0.375 Rational**

8. $\sqrt{16}$ **= 4**
Rational, Integer, Whole Natural

10. 0.725
Rational

11. $\sqrt{121}$ **= 11**
Rational, Integer, Whole Natural

12. $\pi + 30$
3.14 + 3p
Rational } **Irrational**

13. -5.28 **Rational.**

14. 0.14141414... **Rational.**

15. $-\sqrt{5}$
Irrational

16. $-\pi$
Irrational

17. $\sqrt{48}$
Irrational

18. $\sqrt{49}$ **= 7**

19. 0.24682 **Rational**

20. $-\frac{1}{2}$ **0.5 Rational**

21. Give an example of a number that satisfy the following rules:

A. A number that is: real, rational, whole, an integer and natural. **4, 62, 838**
B. A number that is: real, rational, fraction, whole number. _____

$$\frac{1}{1} \qquad \frac{6}{3}$$

Use Your Calculator to determine the value of each RATIONAL Numbers

What did you notice?

A. $\dfrac{-2}{5}$

-0.4

B. $\dfrac{2}{-5}$

-0.4

C. $-\dfrac{2}{5}$

-0.4

Write with a positive denominator:

a) $-\dfrac{4}{6}$

One

b) $-\dfrac{4}{3}$

$\dfrac{-4}{3}$

c) $\dfrac{4}{-7}$

$\dfrac{-4}{7}$

Which of the following numbers
are equal to $-\dfrac{4}{5}$?

$$\dfrac{4}{5}, \quad -\dfrac{5}{4}, \quad \dfrac{-4}{5}, \quad \dfrac{-4}{-5}, \quad -\dfrac{8}{10}$$