

SEPTEMBER 17, 2015

UNIT 1: RATIONAL NUMBERS

**SECTION 3.1:
WHAT IS A RATIONAL
NUMBER?**

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MATH 9



WHAT'S THE POINT OF TODAY'S LESSON?

We will continue working on the Math 9 Specific Curriculum Outcome (SCO) "Numbers 3" OR "N3" which states:

"Demonstrate an understanding of rational numbers by: comparing and ordering rational numbers; solving problems that involve arithmetic operations on rational numbers."



What does **THAT** mean???

SCO N3 means that we will compare and order (largest vs smallest), add, subtract, multiply and divide fractions and any numbers that can be written as fractions. For example, sometimes we will work with $\frac{1}{2}$ or 0.5. We have to know how to work with both.



HOMEWORK QUESTIONS???
(page 101, #8 TO #12abgh (no number lines))

a

10. a)

11. a)

$$8. a) \quad A = -7.9 \quad B = -7.2$$

$$b) \quad C = -4\frac{2}{5} \quad D = -3\frac{1}{5}$$
$$= -4.4 \quad = -3.2$$

HOMEWORK QUESTIONS???
(page 101, #8 TO #12abgh (no number lines))

$$10. a) \quad E = -11 \frac{1}{4} \quad F = -10 \frac{3}{4}$$
$$\quad \quad \quad = \frac{-45}{4} \quad \quad \quad = \frac{-43}{4}$$

$$11. a) \quad E = \frac{-45}{4}$$

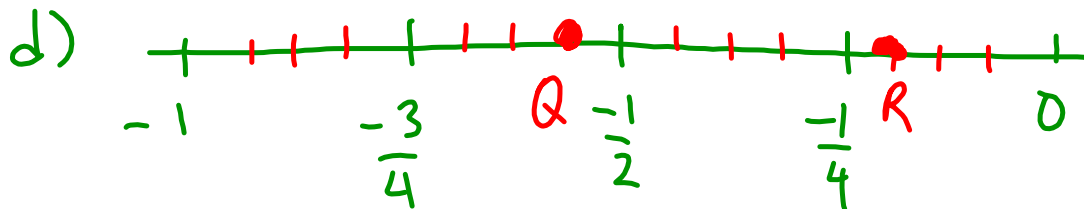
HOMEWORK QUESTIONS???

(page 101, #8 TO #12 abgh (no number lines))

10. bcd

$$\begin{aligned}
 10. b) \quad L &= -5\frac{1}{8} & M &= -5\frac{6}{8} \\
 &= \frac{-41}{8} & &= -5\frac{3}{4} \\
 & & &= \frac{-23}{4}
 \end{aligned}$$

$$\begin{aligned}
 10. c) \quad N &= -4\frac{1}{6} & P &= -3\frac{4}{6} \\
 &= \frac{-25}{6} & &= -3\frac{2}{3} \\
 & & &= \frac{-11}{3}
 \end{aligned}$$



$$Q = \frac{-9}{16}$$

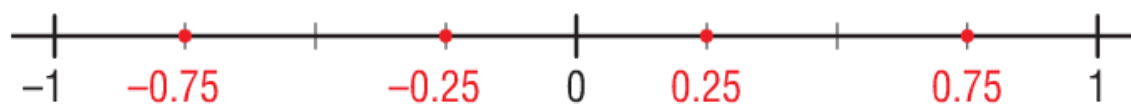
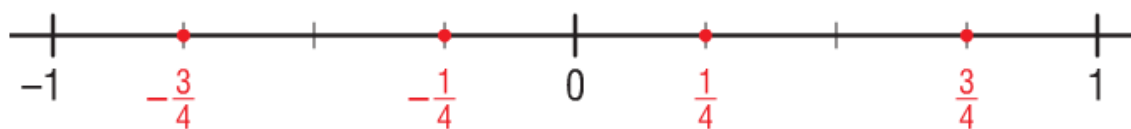
$$R = \frac{-3}{16}$$

HOMEWORK QUESTIONS???
(page 101, #8 TO #12abgh (no number lines))

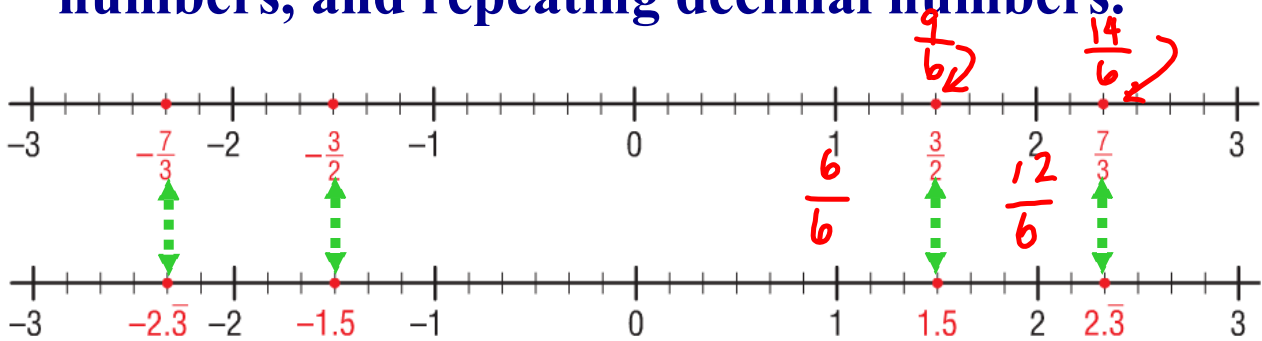
12.a) 3.7 $\dot{\epsilon}$ 4.2

3.8 , 3.9 and 4.0

PLEASE TURN TO PAGE 95 IN *MMS9*.

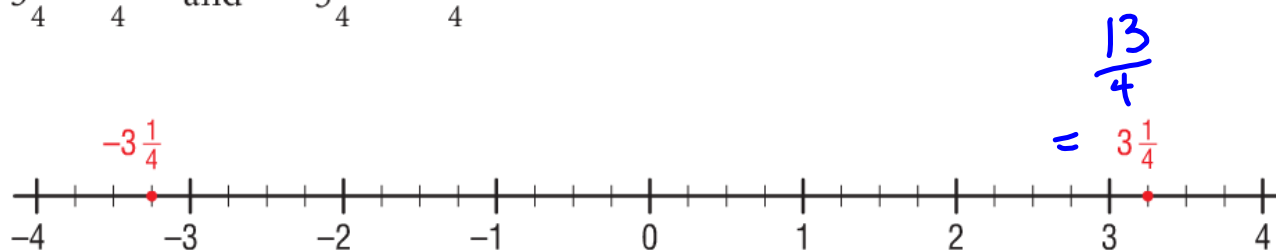


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**Rational numbers can be written in many ways,
including fractions, terminating decimal
numbers, and repeating decimal numbers.**



Any mixed number can be written as an improper fraction:

$$3\frac{1}{4} = \frac{13}{4} \quad \text{and} \quad -3\frac{1}{4} = -\frac{13}{4}$$



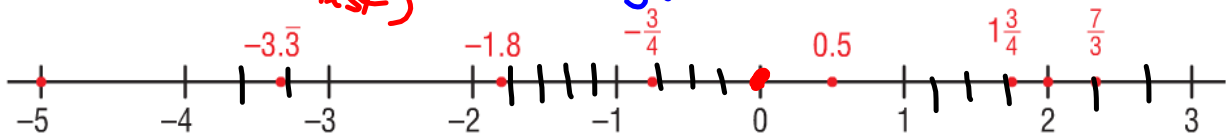
So, mixed numbers are rational numbers.

All these numbers are rational numbers:

$-\frac{3}{4}$, 0.5 , -1.8 , 0 , $-5\frac{7}{3}$, 2 , $-3.\bar{3}$, $1\frac{3}{4}$

-5 to $+3$

-0.75 (smallest) $\rightarrow 2\frac{1}{3}$ (biggest)



-1.8	$-3.\bar{3}$
$= -1\frac{8}{10}$	$= -3\frac{3}{9}$
$= -1\frac{4}{5}$	$= -3\frac{1}{3}$

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**EXAMPLE 2: Ordering Rational Numbers
in Decimal or Fraction Form**

a) Use a number line. Order these numbers from least to greatest:

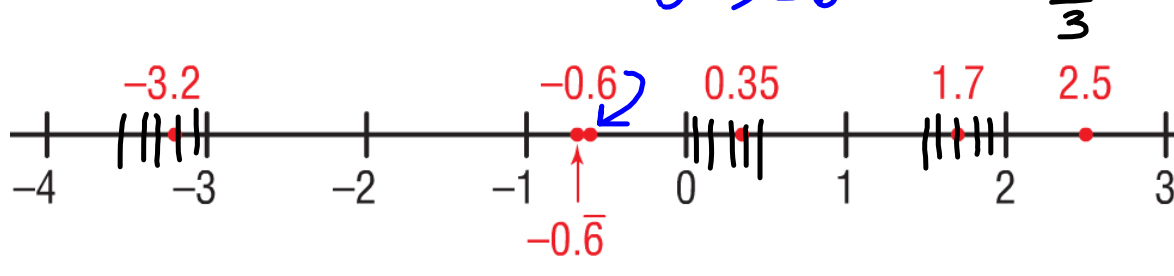
$$\begin{array}{ccccccc} & (+3) & & & (-4) & & \\ & \text{)} & & & \text{)} & & \\ \hline 0.35 & ; & 2.5 & ; & -0.6 & ; & 1.7 & ; & -3.2 & ; & -0.\overline{6} \\ \hline & & * & & & & * & & & & \end{array}$$

I first determine which number is the smallest and which is the largest to decide which integers I need on my number line.

We also need to determine which is larger:
-0.6 OR $-0.\overline{6}$.

0.35 ; 2.5 ; -0.6₀ ; 1.7 ; -3.2 ; -0.6₆

$$\begin{array}{l} \frac{-6}{10} \\ = -\frac{3}{5} \end{array} \quad \begin{array}{l} 0 \text{ vs. } -6 \\ 0 > -6 \end{array} \quad \begin{array}{l} \frac{-6}{6} \\ = -1 \end{array}$$



For least to greatest, read the numbers from left to right: -3.2 ; -0.6₆ ; -0.6₀ ; 0.35 ; 1.7 ; 2.5

CONCEPT REINFORCEMENT

MMS9:

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