

# OCTOBER 6, 2014 <sup>1<sup>ST</sup></sup> <sub>2<sup>ND</sup></sub>

## STARTER

The janitor of an apartment complex notices that the boiler is acting strangely and he feels he needs to evacuate the buildings. He phones 2 of the residents, tells them the news, asks them to call 2 other residents and explain the situation, then evacuate the buildings.

Assume 1) each resident is home and answers the phone immediately,  
2) only one person lives in each apartment,  
3) none of the residents are phoned more than once and  
4) they all do what they are asked.

If each phone call takes 30 seconds and if it takes each resident 90 seconds to evacuate the building, how long will it take to empty all 375 apartments?



## 10/6 - Rational Numbers

*Review of last chapter:*

With your partner, come up with a definition for **integer**?

Positive/Negative WHOLE numbers  
and zero

A **rational number** is a number that can be written as the ratio of two integers.

$$2 = \frac{2}{1}$$

$$-3 = \frac{-3}{1}$$

$$\frac{-1}{2} = \frac{-1}{2}$$

$$= \frac{1}{-2}$$

$$0.25 = \frac{1}{4}$$

$$\frac{25}{100} \curvearrowright$$

Work with your partner and order these numbers from least to greatest:

increasing order

$$-0.5, 1.25, -\frac{1}{3}, 0.5, -\frac{5}{3}$$

$$-\frac{5}{3}, -0.5, -\frac{1}{3}, 0.5, 1.25$$

| What difficulties did you have?   | What did you have to recall from last year?   | What would have made it easier?  |
|---|---|--|
| <p>Fractions + Decimals together</p> <p>Improper fraction</p> <p>Neg. Fractions</p> | <p>Convert improper fractions to mixed #'s</p> <p>Deci <math>\longleftrightarrow</math> Fractions</p> | <p>All decimals</p> <p>All positives</p> <p>No improper</p> <p>Do negatives then positives</p> |

**Remember:**

Decimals  $\longrightarrow$  Fractions

$$0.46 = \frac{46}{100} \div 2$$
$$= \frac{23}{50} \div 2$$

**SAY IT**  
**WRITE IT**  
**SIMPLIFY IT**

Fractions  $\longrightarrow$  Decimals

$$\frac{5}{8}$$
$$8 \overline{) 5.000}$$
$$\begin{array}{r} .625 \\ -48 \phantom{00} \\ \hline 20 \phantom{0} \\ -16 \phantom{00} \\ \hline 40 \\ -40 \\ \hline 0 \end{array}$$

*bottom*  $\overline{)}$  *top*

Now try it again:

$$\frac{1}{3} \neq 0.3$$

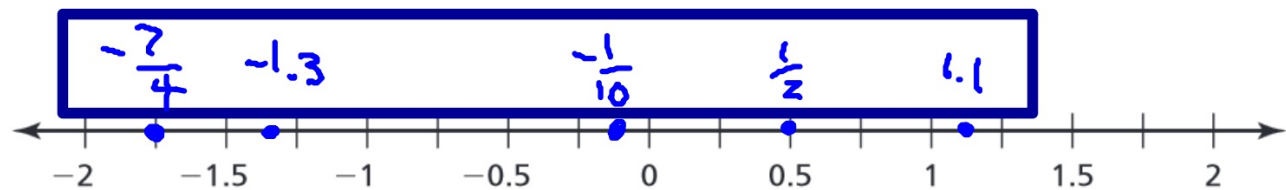
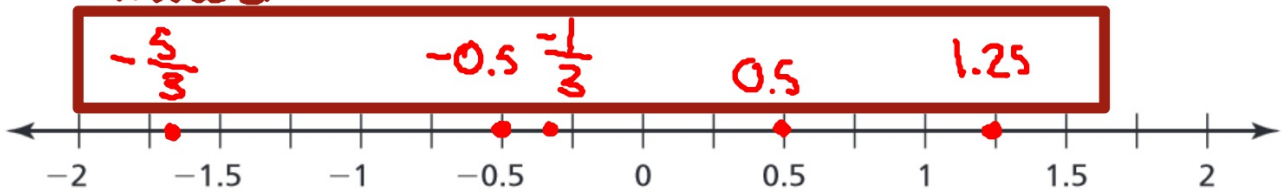
$$\frac{1}{3} = 0.\overline{3} = 0.3333\dots$$

Work with your partner and order these numbers from least to greatest:

a.  $-0.5, 1.25, -\frac{1}{3}, 0.5, -\frac{5}{3}$

b.  $-\frac{7}{4}, 1.1, \frac{1}{2}, -\frac{1}{10}, -1.3$

Answer:



The numbers are in order from least to greatest. Fill in the blank spaces with rational numbers.

terminating  $0.33$   
 non-terminating  $0.33\dots$

Work with your partner and be ready to explain HOW you figured it out.

$-\frac{1}{2}$ ,  $\boxed{0.25}$ ,  $\frac{1}{3}$ ,  $\boxed{1}$ ,  $\frac{7}{5}$ ,  $\boxed{1.5}$

$-0.5$        $0.\bar{3}$        $1.4$        $27$   
 $\frac{1}{4}$        $0.4$        $92\frac{3}{8}$   
 $-0.4$        $0.1$        $0.5$   
 $-0.3$        $0.2$        $0.6$   
 $-0.2$        $0.3$        $0.7$   
 $-0.1$             $0.8$   
 $0$             $0.9$   
                   $1.1$   
                   $1.2$   
                   $1.3$

$-\frac{1}{3}$ ,  $\boxed{-0.2}$ ,  $-0.1$ ,  $\boxed{0}$ ,  $\frac{4}{5}$ ,  $\boxed{\frac{8}{5}}$

$-0.3$   
 $-0.31$   
 $-0.275$   
 $-0.15$

$1$   
 $1.0E20$   
 $1.0 \times 10^{20}$   
 $9.001$

**HOMEWORK**

Yellow WS 1

**DUE** Tuesday