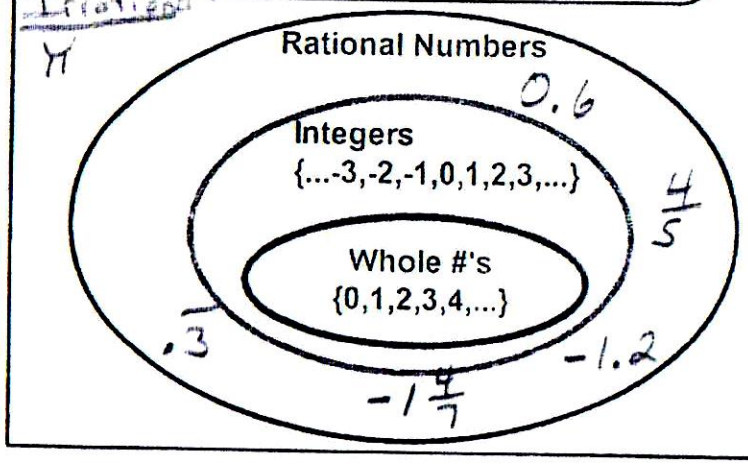
Math 7 Notes
(Lesson 4.2)
Order and Compare Rational Numbers



When we use rational numbers we often need to find an equivalent form of the number to understand the situation.

Payton has a "two ninety six" batting average.

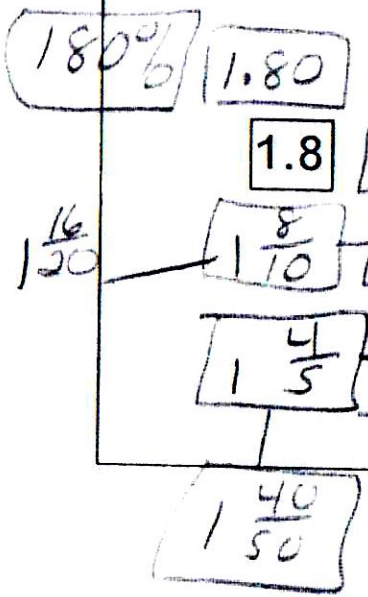
hits / at bat 296/1000 hit / at bats 3/12 = 1/4 = .250

The scale at the deli counter says 0.7 and Josh asked for three fourths of a pound of ham.

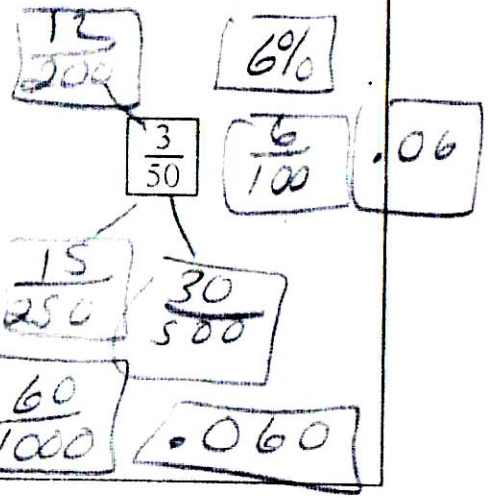
3/4

.75

How many different equivalent ways can you write this number?



How many different equivalent ways can you write this number?



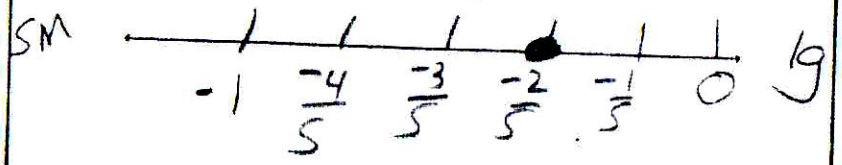
Ways to compare rational numbers:

* Make a number line
*Use a 0 $\frac{1}{2}$ 1 benchmark chart
*Write all numbers as decimals .80 .81
*Write all numbers as fractions with like denominators 6 9 (18) 27
*Use a combination of the above strategies

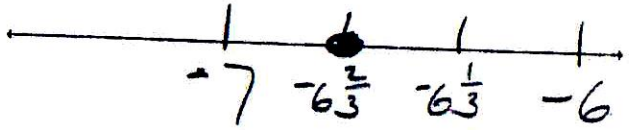
$\frac{2}{5} < \frac{4}{5}$

Use a number line

<, >, or = ?? $\frac{-2}{5} \bigcirc \frac{-4}{5}$



<, >, or = ?? $-6\frac{2}{3} \bigcirc -6\frac{1}{3}$



Use a 0 $\frac{1}{2}$ 1 benchmark chart

<, >, = ?

$\frac{8}{9} \bigcirc \frac{22}{50}$

Close to 0	Close to $\frac{1}{2}$	Close to 1
	$\frac{22}{50}$	$\frac{8}{9}$

<, >, = ?

$\frac{5}{18} \bigcirc \frac{13}{15}$

Close to 0	Close to $\frac{1}{2}$	Close to 1
	$\frac{5}{18}$	$\frac{13}{15}$

Write these numbers in order from smallest to largest:

0.006 $\frac{73}{75}$ 0.57 $\frac{7}{500}$ $\frac{5}{16}$

Close to 0	Close to $\frac{1}{2}$	Close to 1
(1) 0,006	(3) $\frac{5}{16}$ (4) .57	(5) $\frac{73}{75}$
(2) $\frac{7}{500} = \frac{14}{1000}$		

Write these numbers in order from smallest to largest:

$\frac{3}{5}$ 0.62 0.007 $\frac{5}{9}$ $\frac{3}{50}$

Close to 0	Close to $\frac{1}{2}$	Close to 1
(1) .007	(4) $\frac{3}{5}$ .6	
(2) $\frac{3}{50}$	(5) .62	
	(3) $\frac{5}{9}$ .5	

$\frac{3}{50} = \frac{6}{100} = .06$

.007

Write fractions with a common denominator

< > or = ?

$\frac{4}{9} \bigcirc \frac{2}{5}$ $\quad$ $\frac{7}{12} \bigcirc \frac{5}{9}$

$\frac{4 \times 5}{9 \times 5} = \frac{20}{45}$ $\quad$ $\frac{2 \times 9}{5 \times 9} = \frac{18}{45}$ $\quad$ $\frac{7}{12} = \frac{21}{36}$ $\quad$ $\frac{5}{9} = \frac{20}{36}$

12
24
36

Write as decimals

< > or = ?

$\frac{7}{8} \bigcirc \frac{17 \times 5}{20 \times 5}$

.875 $\quad$ .85

$0.025 \bigcirc \frac{1}{4}$

0.25

Less than (<), Greater than (>), or Equal (=) ???

Verify by using two different methods.

$\frac{2}{3} \bigcirc \frac{13 \times 5}{20 \times 5}$

$.\overline{6}$ $\quad$ .65

OR

$\frac{2}{3} = \frac{40}{60}$ $\quad$ $\frac{13}{20} = \frac{39}{60}$

$0.15 \bigcirc \frac{1}{6}$

$.1\overline{6}$

$\frac{15}{100} = \frac{3}{20}$ $\quad$ $\frac{1}{6}$

$\frac{9}{60}$ $\quad$ $\frac{10}{60}$

Less than (<), Greater than (>), or Equal (=) ???

Verify by using at least two different methods.

$\frac{4}{9} \bigcirc 0.49$

$.\overline{4}$ $\quad$ .49

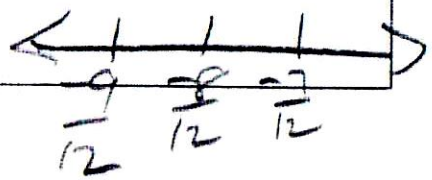
$\frac{4}{9}$ $\quad$ $\frac{49}{100}$

$\frac{400}{900}$ $\quad$ $\frac{441}{900}$

$\frac{-3}{4} \bigcirc \frac{-2}{3}$

-0.75 $\quad$ $-0.\overline{6}$

$\frac{-9}{12}$ $\quad$ $\frac{-8}{12}$



$\frac{-9}{12}$ $\quad$ $\frac{-8}{12}$ $\quad$ $\frac{-7}{12}$

On her first quiz, Sue answered 88% of the questions correctly. On her second quiz she answered 21 out of 24 questions correctly. On which quiz did Sue have the better score?

1st $\quad 88\% = 0.88$ * (1st)

2nd $\quad \frac{21}{24} = \frac{7}{8} = 0.875$

Sam made 65% of his free throws. Ted made 9 out of 12 free throws. Allen made 0.52 of his free throws. Who made their free throws the greater amount of time?

S $\quad 65\%$

T $\quad \frac{9}{12} = \frac{3}{4} = 75\%$ * (Ted)

A $\quad 0.52 = 52\%$