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Notes: **Comparing & Converting Rational Numbers**

Created for you by Ms. Nhotsoubanh

Definitions:

Terminating Decimal – a decimal that comes to an "end"
Examples: 3.2   5.47   −72.83647586

Repeating Decimal – a decimal which contains a sequence of digits that repeats itself indefinitely (forever). We use bar notation to show which digit(s) repeat.
Examples with *bar notation*: $7.\overline{43}$ $-19.\overline{258}$ $56.3\overline{4}$

Comparing Rational Numbers

Directions: *Compare the following fractions using <, >, or =.*

1) 16 $\frac{2}{5}$ (>) $\frac{3}{8}$ 15 **Steps:** -Use "bottoms up" cross products -Then compare	2) 21 $\frac{7}{9}$ (>) $\frac{2}{3}$ 18
3) 0.38 (>) $\frac{3}{8}$ ↓ $\frac{38}{100}$ ◯ $\frac{3}{8}$ 300 38 × 8 = 304 **Steps:** -Convert to similar form. -Then compare	4) 0.53 (<) $\frac{3}{5}$ ↓ 265 $\frac{53}{100}$ ◯ $\frac{3}{5}$ 300 53 × 5 = 265

5) *Order the following values from least to greatest.*

$\frac{4}{9}, \frac{2}{5}, \frac{9}{20}$

Compare 2 at a time

20 $\frac{4}{9}$ ✕ $\frac{2}{5}$ 18 $\frac{4}{9} < \frac{2}{5}$

80 $\frac{4}{5}$ ✕ $\frac{9}{20}$ 45 $\frac{4}{5} > \frac{9}{20}$

40 $\frac{2}{5}$ ✕ $\frac{9}{20}$ 45 $\frac{2}{5} < \frac{9}{20}$

$\frac{2}{5}, \frac{9}{20}, \frac{4}{9}$

Name: Key
Math 7H – Date: Oct. 1
HW: Inside this foldable

Glue on page 27

How can we write a decimal as a fraction?

To write a decimal as a fraction simply write it exactly the way that you say it.

Keep in mind place value.

Millions	Hundred Thousands	Ten Thousands	Thousands	Hundreds	Tens	Ones	Decimal Point (AND)	Tenths	Hundredths	Thousandths	Ten Thousandths	Hundred Thousandths
		3	4	2	8	5	•	7	2	9	6	1

Example	Decimal in Words	Fraction
a) 0.24	24 hundredths	$\frac{24}{100}$
b) 12.4	12 and 4 tenths	$12\frac{4}{10}$
c) 4.123	4 and 123 thousandths	$4\frac{123}{1000}$
d) 3.78	3 and 78 hundredths	$3\frac{78}{100}$

How to Convert Fractions to Decimals

Remember that a fraction bar represents division. To convert a fraction to an equivalent decimal you must divide the numerator by the denominator. That is, the top number by the bottom number.

numerator / denominator

Example: $\frac{7}{8}$ = divisor) quotient, $8\overline{)7}$ ← dividend

ans. $\frac{7}{8} = 0.875$

$$\begin{array}{r} 0.875 \\ 8\overline{)7.000} \\ -64\downarrow \\ \hline 60\downarrow \\ -56 \\ \hline 40 \end{array}$$

Homework - Show work on page 28

Directions:

Directions: *Compare the following fractions using <, >, or =.*

1) $\frac{6}{7}$? $\frac{10}{11}$ — 66, 70; "bu" "bu"

2) $\frac{3}{15}$? $\frac{5}{8}$ — 24, 75; 2 15 ×5 75

3) $\frac{4}{8}$? $\frac{2}{4}$ — 16, 16; bottoms up

4) $\frac{1}{3}$? 0.19 — 100; 57; $\frac{19}{100}$ 2 19 ×3 57

5) $\frac{1}{5}$? 0.15 — 100; 75; $\frac{15}{100}$ 15 ×5 75

6) 2.5 ? $2\frac{1}{2}$ — 5 10 2 1/2

Directions: *Order the following values from least to greatest.*

7) 0.294, 0.87, 0.209, $0.\overline{22}$ — 0.209, 0.22, 0.294, 0.87

0.870
0.209
0.222

Directions: Fill in the missing part of the table.

Decimal	Decimal in Words	Fraction
8) 0.28	28 hundredths	$\frac{28}{100}$
9) 3.2	3 and 2 tenths	$3\frac{2}{10}$
10) 0.62	62 hundredths	$\frac{62}{100}$

Directions: Evaluate each algebraic expression where a = 4, b = −5, and c = −2. Show work in your notebook on page 28.

11) 3a − 5b **12)** a(b + c) **13)** c − 9a + b

Directions: Convert each fraction to a decimal. Show work in your notebook on page 28.

14) $\frac{2}{5}$ **15)** $-\frac{8}{25}$ **16)** $3\frac{1}{4}$

Quiz 4 on Wednesday