Curriculum Outcome

N1: Demonstrate an understanding of rational numbers by: comparing and ordering rational numbers; solving problems that involve arithmetic operations on rational numbers.

Student Friendly:
"Adding fractions and adding decimals."

Write $\frac{4}{5}$ as a decimal number.

$= 0.8$

(terminating)

Warm Up

$\frac{8}{10} \begin{array}{c}\div 2 \\ \div 2\end{array} = \frac{4}{5}$
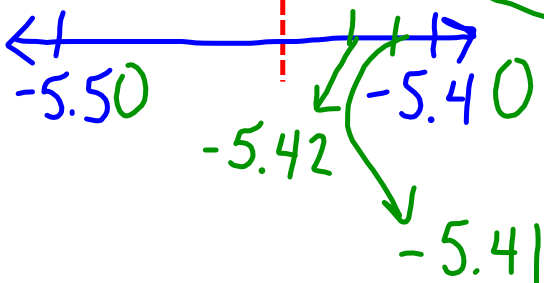
What is a rational number?

A number that can be expressed as a FRACTION.

State two rational numbers between -5.4 and -5.5

-5.50

-5.42

-5.40

-5.41

Solve: 2 (7) - (11 - 9) + 5

$= 14 - 2 + 5$

$= 12 + 5$

$= 17$

Write two equivalent fractions to the fraction below.

$-\frac{8}{9} = \frac{-8}{9} = \frac{8}{-9}$

HOME LEARNING:
Pages 102 and 103 - Questions:
5 , 6 , 7, 12aceh , 13

SOLUTIONS:

Changing fractions to decimals...

Terminating Decimal Number: A decimal number that ends.　　0.8

Repeating Decimal Number: A decimal number that has a pattern that goes on forever.　　$-0.\overline{8}$　　$0.\overline{37}$

Express each fraction as a decimal number, then sort as a repeating or terminating decimal number.

Repeating

$-0.\overline{5}$

$0.\overline{81}$

$\dfrac{-5}{9}$ = $-0.\overline{5}$

$\dfrac{27}{33}$ = $0.\overline{81}$

$\dfrac{20}{-10}$ = -2 or -2.0

Terminating

-2.0

What numbers are between $\dfrac{2}{5}$ and $\dfrac{3}{4}$?

There are two ways!

Multiplles:

5, 10, 15, (20)

4, 8, 12, 16, (20)

1. **Change these fractions to decimals.**

$$\dfrac{2}{5} \qquad \dfrac{3}{4}$$

$= 0.4 \qquad = 0.75$

0.5 0.6

2. **Write the fractions with a common denominator.**

$$\dfrac{2}{5} \times 4 \qquad \dfrac{3}{4} \times 5$$

$$\dfrac{2}{5}_{\times 4} \qquad \dfrac{3}{4 \times 5}$$

$$\dfrac{8}{20} \qquad \dfrac{15}{20}$$

$$\dfrac{10}{20} \div 10 \qquad \dfrac{14}{20} \div 2$$

$$= \dfrac{1}{2} \qquad = \dfrac{7}{10}$$

$$\dfrac{2}{5} , \boxed{\dfrac{1}{2} , \dfrac{7}{10}} , \dfrac{3}{4}$$

Improper vs. Mixed Numbers

$$\frac{7}{3}$$

This is an **improper fraction.**

(The numerator is LARGER than the denominator.)

• - - - - - - - →

Mixed number: **Integer + Fraction** $2\frac{1}{3}$

You try: $\dfrac{^{-}15}{4}$

$$= -3\frac{3}{4}$$

Changing mixed Numbers to improper fractions:

$$2 \overset{+}{\underset{\times}{}} \frac{5}{6}$$

$$= \frac{17}{6}$$

$\frac{6}{6} \Big\} \, 1$

$\frac{6}{6} \Big\} \, 1$

$\frac{5}{6}$

$$-3 \overset{+}{\underset{\times}{}} \frac{1}{8}$$

$$= - \frac{25}{8}$$

You try:

$$5 \frac{3}{7}$$

$$= \frac{38}{7}$$

$$-4 \frac{1}{3}$$

$$= - \frac{13}{3}$$

Arrange the numbers from least to greatest.
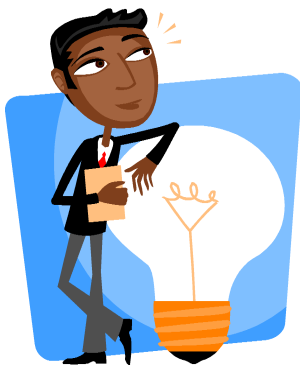
$$-\frac{3}{8}, \frac{5}{9}, -\frac{10}{4}, -1\frac{1}{4}, \frac{7}{10}, \frac{8}{3}$$

-0.375

③

$0.\overline{5}$

④

-2.5

①

-1.25

②

0.7

⑤

$2.\overline{6}$

⑥

$L \text{ to } G: \quad -\frac{10}{4}; \quad -1\frac{1}{4}; \quad \frac{-3}{8}; \quad \frac{5}{9}; \quad \frac{7}{10}; \quad \frac{8}{3}$

Find two rational numbers between the following pairs of numbers.

(May use decimal numbers.)

$$\frac{-3}{8} \qquad \frac{-4}{8}$$

= -0.375   = -0.5

−0.39 ; −0.44

Show your work!

(NO decimal numbers, please!)

$$\frac{5}{8} \quad \times 2 / \times 3 \quad \frac{6}{8} \quad \times 2 / \times 3$$
$$\times 2 / \times 3 \qquad \times 2 / \times 3$$

Go to a bigger denominator; find equivalent fractions.

$$= \frac{10}{16} \qquad = \frac{12}{16}$$

$$\frac{11}{16}$$

$$= \frac{15}{24} \qquad = \frac{18}{24}$$

$$\frac{17}{24}$$

$$\frac{5}{8} , \boxed{\frac{11}{16} , \frac{17}{24}} , \frac{6}{8}$$

Which rational number is larger?

(May use decimal numbers.)

$$\frac{12}{15} \qquad \frac{13}{16}$$

$$= 0.8\underline{0} \qquad = 0.8\underline{1}25$$

$1 > 0$, so

$$\boxed{\frac{12}{15} < \frac{13}{16}}$$

(largest)

Show your work!

(NO decimal numbers, please!)

$$\frac{2}{3} \;\substack{\times\,4 \\ \times\,4} \qquad \frac{3}{4} \;\substack{\times\,3 \\ \times\,3}$$

$$= \frac{8}{12} \qquad = \frac{9}{12}$$

$$\boxed{\frac{2}{3} < \frac{3}{4}}$$

(largest)

Which rational number is larger?

-1   -3   -0.5   -0.75

(Be careful with negative numbers...)

It is now time for HOME LEARNING!!!

HOME LEARNING:

Pages 102 and 103 - Questions: 14aceg , 16bf , 17ac , 21 , 24ac

NOTE:

Don't just give answers - you must copy down the question first. When you see fractions, you must use fractions and show all work. Ignore anything about "number lines".