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:
How to identify and write rational numbers

No talking try it on your own

Warm Up

Bedmas

Solve Each of The Following In Your Notebooks

1) $3 + 7(10-6) - 2 =$

2) $10 \times 5 + 3(12-3) =$

Warm Up

Solve Each of The Following In Your Notebooks

1) $3 + 7(10-6) - 2 =$

$3 + 7(4) - 2$

$3 + 28 - 2$

$31 - 2$

29

No talking try it on your own

Warm Up

Solve Each of The Following In Your Notebooks

2) $10 \times 5 + 3(12-3)$

$10 \times 5 + 3(9)$

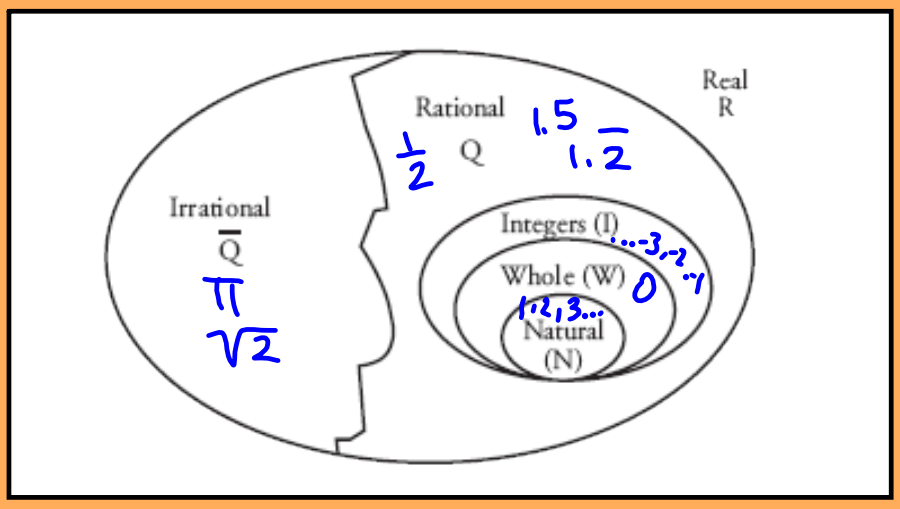
$50 + 27$

77

No talking try it on your own

Chuck Norris of Numbers

Review of Types of Number Systems



THE NUMBER SYSTEM

1. **Natural Numbers** : All positive non-zero numbers
   Counting numbers Ex. 1, 2, 3 etc

2. **Whole Numbers**: Counting numbers including zero.
   Ex. 0, 1, 2, 3, etc

3. **Integers:** Are all positive and negative whole numbers.
   (Remember zero is neither negative or positive)
   Ex: ....3,2,1,0,-1-2,-3...

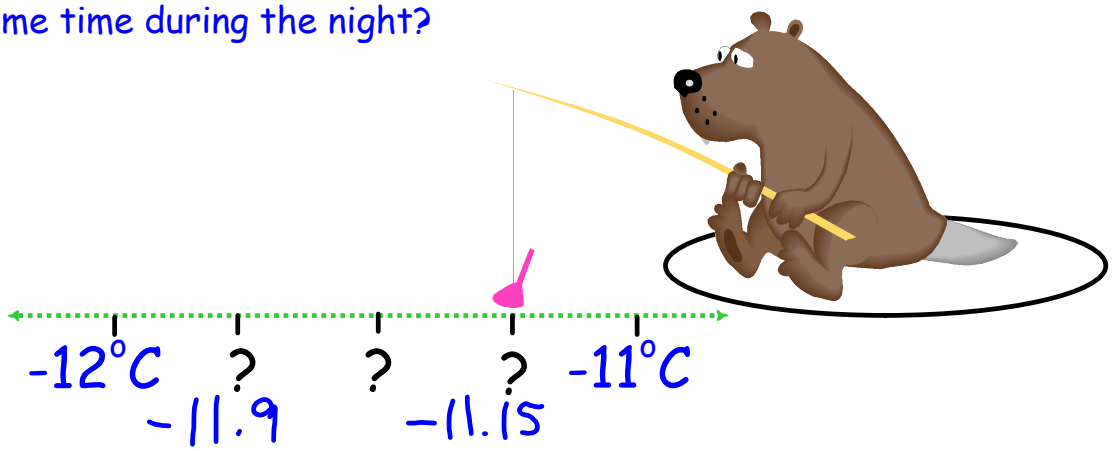
$1.\overline{2}$ 1.5 1.26

4. **Rational Numbers:** All whole numbers, fractions, mixed numbers, decimals and their negatives
   The decimal must repeat or terminate also.
   Ex: 1/3, 4, 3/4 $1.\overline{2}$

5. **Irrational Numbers:** Decimals that never terminate or repeat.
   Ex: $\sqrt{2}$ π

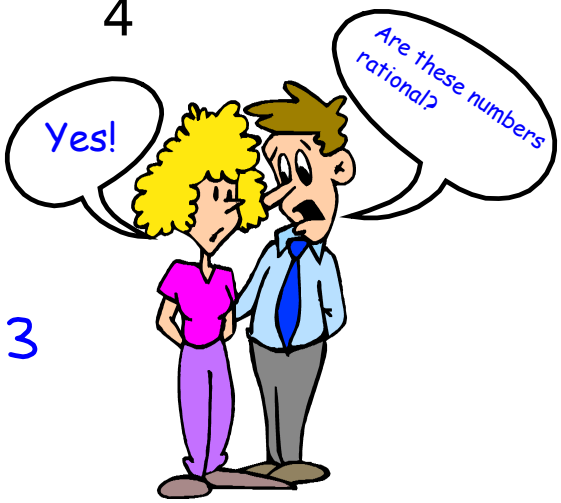
6. **Real Numbers:** All rational and irrational numbers are real numbers
   Ex: All possible numbers

Suppose you are ice fishing on Blanchford Lake, NWT. The temperature at midnight is -12°C. At 6 am the next day, the temperature is -11°C. What must the temperature have been at some time during the night?



$6\frac{3}{4}$ -16

2 12.7 700



$\frac{-8}{9}$ $\frac{4}{5}$

$\sqrt{9} = 3$ 0.1258

0.3 -8 0.25

How to change a fraction to a decimal:

Take the top and divide by the bottom

$$\frac{3}{8}$$

$3 \div 8 = 0.375$

Use a calculator to determine the value of each rational number.

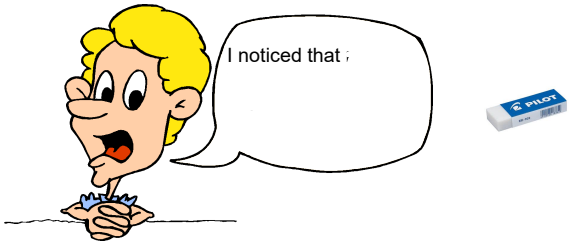
$-\frac{7}{5} = -7 \div 5 = -1.4$

$-\frac{7}{5} = -(7 \div 5) = -1.4$

$-\frac{7}{5} = 7 \div -5 = -1.4$

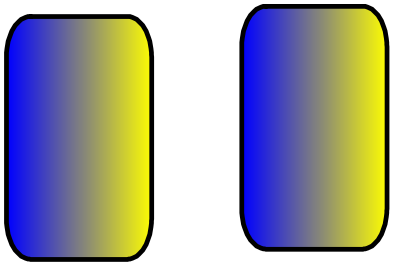
$-\frac{3}{5} \quad -\frac{3}{5}$

What did you notice??



Write 2 more equivalent fraction to the following:

$\frac{-4}{9} \quad \frac{4}{-9} \quad -\frac{4}{9}$



Changing fractions to decimals...

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

Repeating		Terminating
-0.5	$\frac{-5}{9}$ = -0.5555	
$0.8\overline{1}$	$\frac{27}{33}$ = 0.818181	
	$\frac{20}{-10}$ = -2	-2

Repeating Decimal: a decimal that has a pattern that goes on forever

Terminating Decimal: a decimal that ends

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

There are two ways!

1. Change the fractions to decimals.

$\frac{2}{5}$ $\frac{3}{4}$

0.4 0.75

0.5

2. Write the fractions with common a denominator.

$\frac{2}{5} \times 4$ $\frac{3}{4} \times 5$

$\frac{8}{20}$ $\frac{15}{20}$

$\frac{14}{20}$

The numerator is LARGER than the denominator.

Improper vs. Mixed Fractions

$\frac{7}{3}$ This is a Improper Fraction ⟶ Mixed Fraction: Integer + Fraction $2\frac{1}{3}$

$\frac{2\times3+1}{3}$

$\frac{6+1}{3}$

$2\frac{1}{3}$

You try: $-\frac{15}{4} = -3\frac{3}{4}$

Mixed Fractions to Improper

$2\frac{5}{6} = \frac{2\times6+5}{6} = \frac{17}{6}$

$-3\frac{1}{8} \cdot \frac{3\times8+1}{8} - \frac{25}{8}$

You Try

$5\frac{3}{7}$ $\frac{5\times7+3}{7} = \frac{38}{7}$

$-4\frac{1}{3} = \frac{4\times3+1}{3} = -\frac{13}{3}$

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 0.5 -2.5 -1.25 0.7 2.6

$$-\frac{10}{4} \quad -1\frac{1}{4} \quad -\frac{3}{8} \quad \frac{5}{9} \quad \frac{7}{10} \quad \frac{8}{3}$$

Arrange the numbers from least to greatest.

$$-\frac{3}{8}, \frac{5}{9}, -\frac{10}{4}, -1\frac{1}{4}, \frac{7}{10}, \frac{8}{3}$$

Change the numbers to decimals!

-0.375, 0.555..., -2.5, -1.25, 0.7, 2.666...

Least...

-2.5
-1.25
-0.375
0.555...
0.7
2.666...

...Greatest

$$-\frac{10}{4}, -1\frac{1}{4}, -\frac{3}{8}, \frac{5}{9}, \frac{7}{10}, \frac{8}{3}$$

Find two rational numbers between...

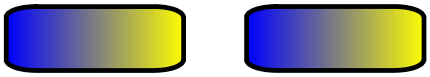
(Decimals may be used on this side.)

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

-0.375 -0.5

-0.4

-0.475



Show your work!

(NO Decimals please!!.)

$\frac{5}{8}$ x 2 $\frac{6}{8}$ x 2

$\frac{10}{16}$ $\frac{11}{16}$ $\frac{12}{16}$

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

$\frac{16}{24}$ $\frac{17}{24}$

Which rational number is larger??

(Decimals may be used on this side.)

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

0.8 0.8125

Show your work!

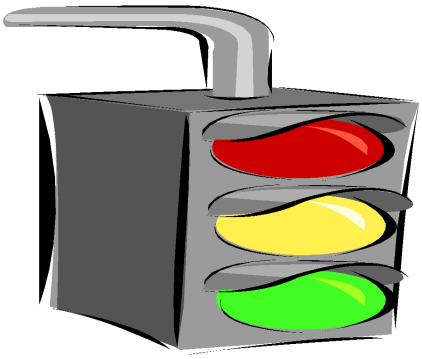
(NO Decimals please!!.)

$\frac{2}{3}$ x 4 $\frac{3}{4}$ x 3

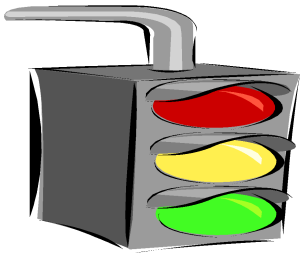
$\frac{8}{12}$ $\frac{9}{12}$

Be careful with negative numbers:

-1 -3 -0.5 -0.75



Now it is time for Home Learning



Homework

Page 101-103
Questions:
5, 6, 7, 12aceh. 13, 14aceg,16bf,17ac, 21,23ad,24ac

Note:

If the questions have ONLY fractions in them than you must have fractional answers. If the questions have decimal and fractions, then your answer can either be in decimal for of fraction form