# Warm up

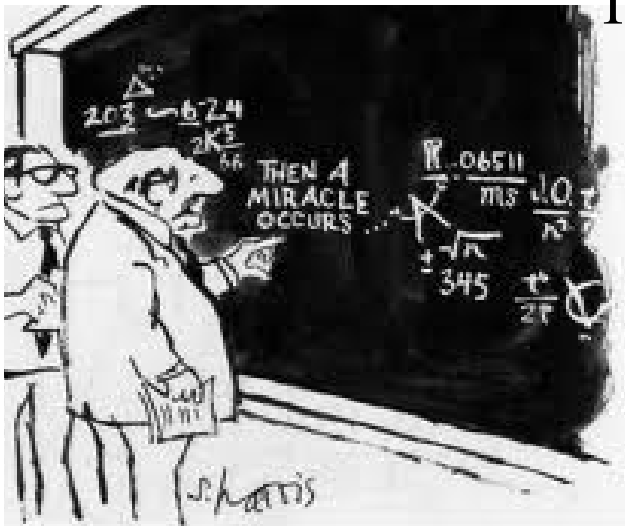**Solve Each of The Following In Your Notebooks**



"...ink you should be more explicit here in step two."

from *What's so Funny about Science?* by Sidney Harris (1977)
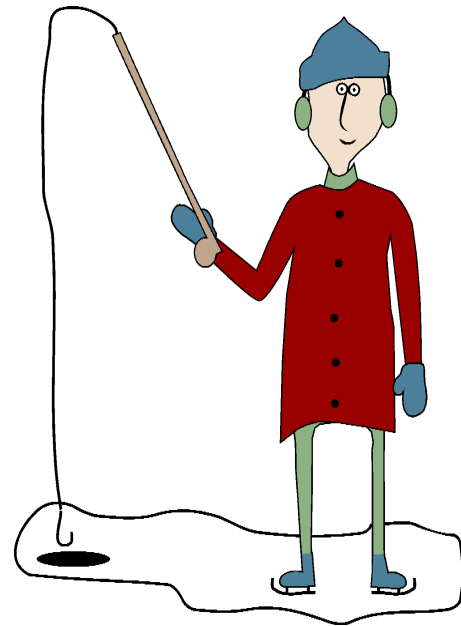
1)  $3 + 7(10-6) - 2 =$

$3 + 7(4) - 2$
$3 + 28 - 2$
$31 - 2$
$29$

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

$10 \times 5 + 3(9)$
$= 50 + 27$
$= 77$

**B** rackets
**E** x ponents
**D** ivision ⎫
**M** ultiply ⎬ in order
**A** dd ⎪
**S** ubtraction ⎭
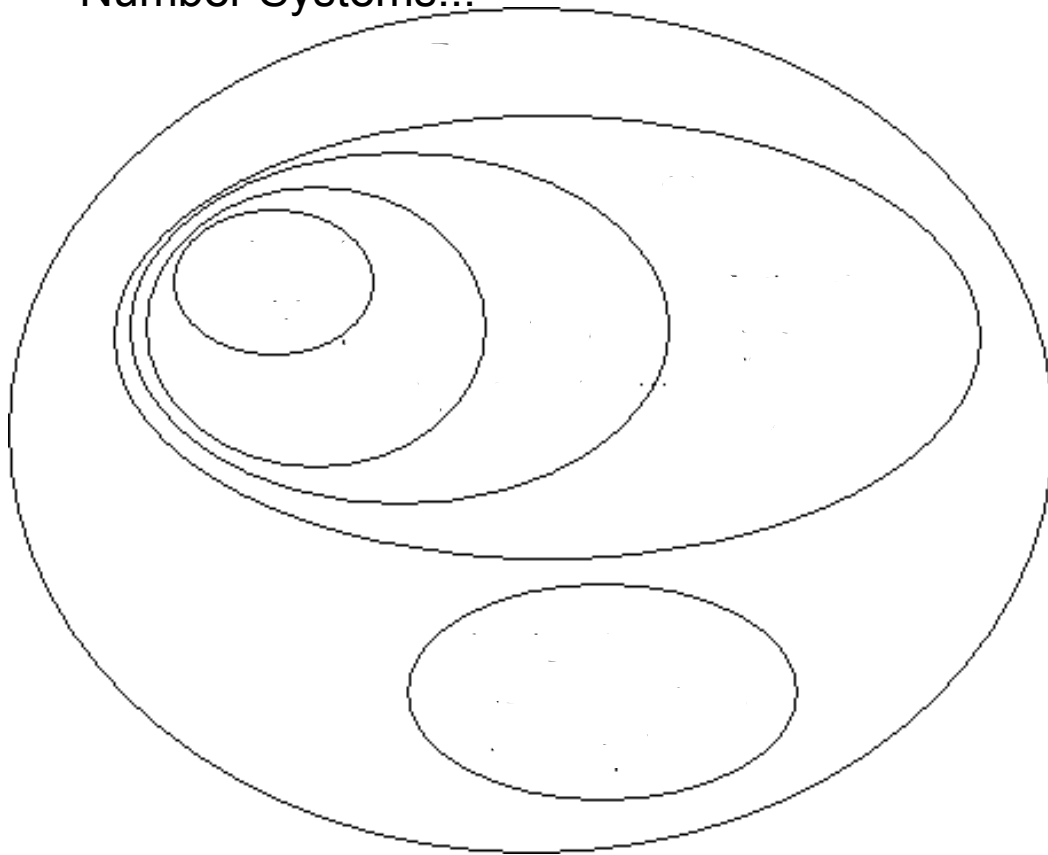
Suppose you are ice fishing on Blachford Lake, NWT.  The temperature at midnight is -12$^o$C. At 6 am the next day, the temperature is -11$^o$C. What must the temperature have been at some time during the night?

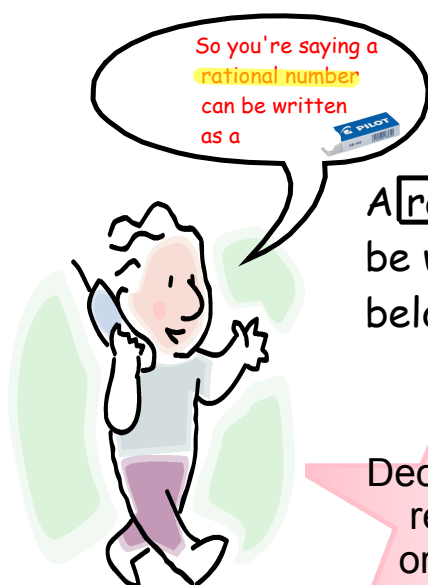These look like rational numbers to me!

-12°C   ?     ?     ?   -11°C
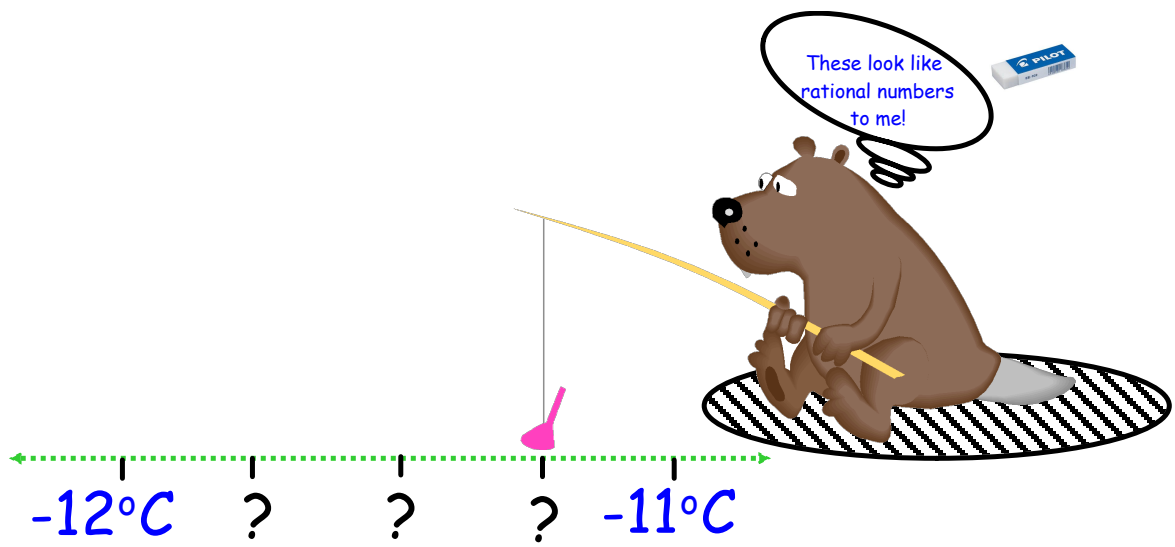
Number Systems...

Natural Numbers -

Whole Numbers -

Integers -

Rational Numbers

Irrational Numbers

Real Numbers

So you're saying a rational number can be written as a

A rational number is any number that can be written in the form $\frac{a}{b}$ where a and b belong to integers and b≠0.

Decimal form repeats or ends.

$$Q = \left\{ \frac{a}{b} \mid a, b \in I, b \neq 0 \right\}$$

Changing fractions to decimals...

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

Repeating...　　　　　　　　　　　　　　Terminating...

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

$0.\overline{81}$ _____　　　$\dfrac{27}{33}$ $\dfrac{9}{11}$　_____

_____　　　$\dfrac{20}{-10}$　　　$-2$ _____

$0.\overline{2}$ _____　　　$\dfrac{6}{27}$ $\dfrac{2}{9}$　_____

_____　　　$\dfrac{-8}{5}$　　　$-1.6$ _____

_____　　　$\dfrac{18}{12}$ $\dfrac{3}{2}$　$1.5$ _____

$6\dfrac{3}{4}$

12.7

-16

700

Yes!

All of these numbers can be written as a fraction, are they all rational numbers?

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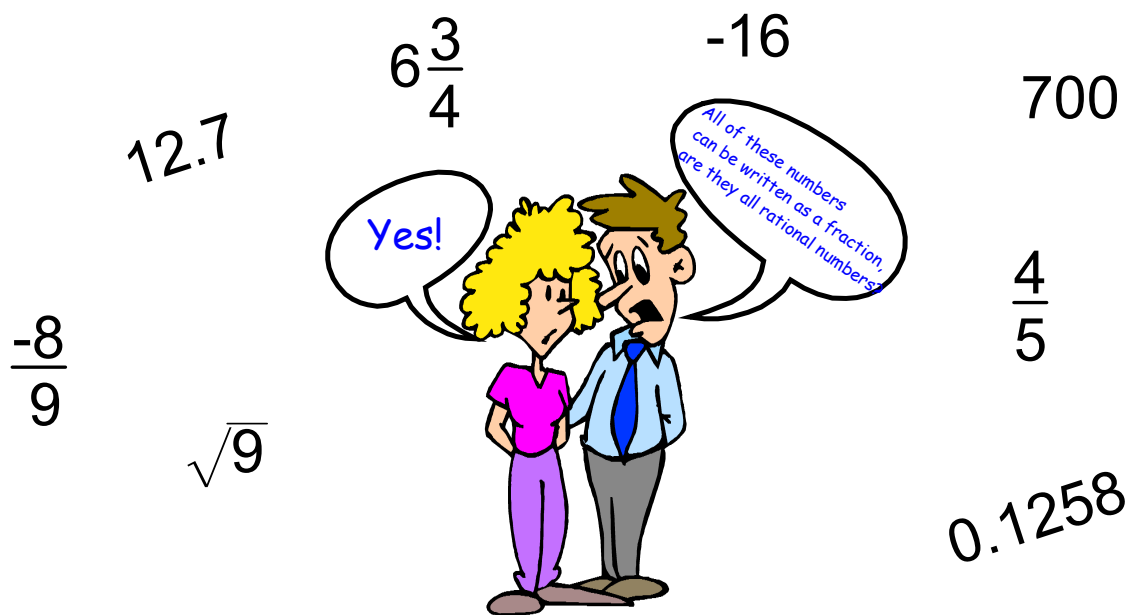
$\dfrac{-8}{9}$

$\sqrt{9}$

0.1258

Irrational numbers cannot be written as fractions.

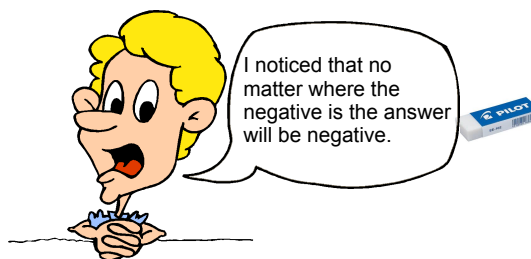Use a calculator to determine
the value of each rational number.
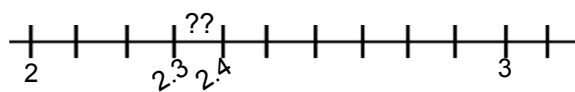
What did you notice??

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

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

I noticed that no matter where the negative is the answer will be negative.

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

$$-\frac{7}{5} \qquad -\frac{7}{5} \qquad \frac{7}{-5}$$

Is there a number between 2.3 and 2.4?

??

2          2.3  2.4                    3
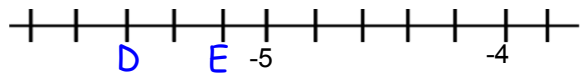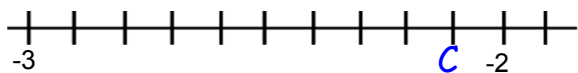
Hint... Add a zero place holder
at the end of the decimal.
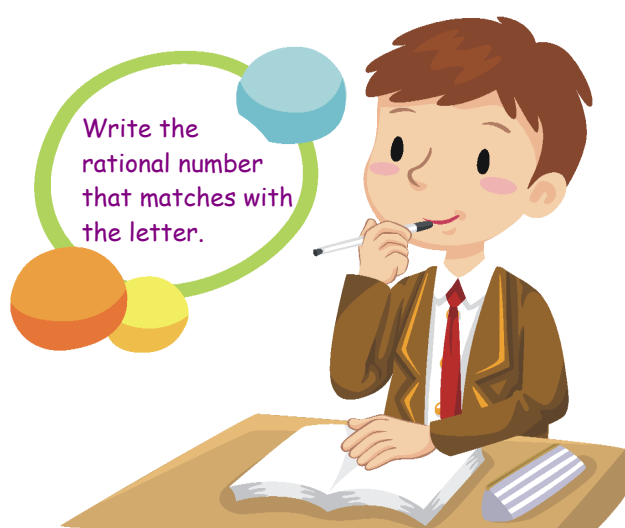
2.30

2.40

2.30                                    2.40

6.0

Write the rational number that matches with the letter.
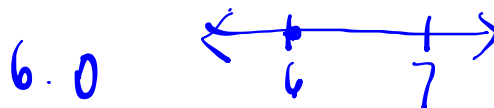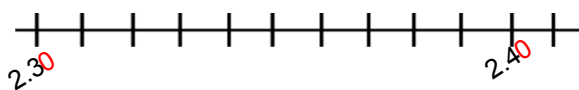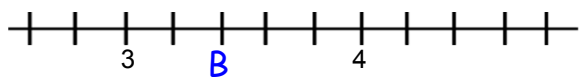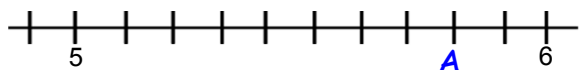
A  5.8

B  3.4

C  -2.1

D  -5.6

E  -5.2

I. Change the fractions to decimals.

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

$= 0.4$   $= 0.75$

$0.6$ is between them

"2 divided by 5"
"3 divided by 4"

There are two ways!

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

II. Write the fractions with common denominators.

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

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

$\dfrac{10}{20}$ is between the numbers

<span style="color:blue">The numerator is LARGER than the denominator.</span>

**<u>Improper Fractions vs. Mixed Fractions</u>**

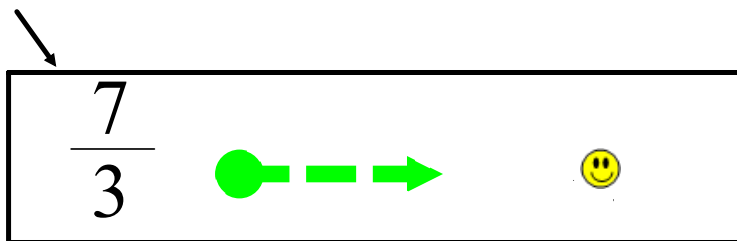$$\frac{7}{3}$$ This is an <span style="color:red">Improper Fraction</span> ●‑ ‑ ➡ <span style="color:blue">Mixed Fraction</span> <span style="color:yellow">Integer + Fraction</span>   $2\frac{1}{3}$

$7 \div 3 = 2 \quad (2 \times 3 = 6) \quad 1R$

$2\frac{1}{3}$

The numerator is LARGER than the denominator.

## Improper vs. Mixed Fractions

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

This is an

Improper Fraction

Integer + Fraction

Mixed Fraction

# Arrange the numbers from least to greatest.

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

$-0.375$    $0.\overline{5}$    $-1.25$

$-2.5$      $0.7$      $2.\overline{6}$

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

# Arrange the numbers from least to greatest.

$$-\frac{3}{8}, \ \frac{5}{9}, \ -\frac{10}{4}, \ -1\frac{1}{4}, \ \frac{7}{10}, \ \frac{8}{3}$$
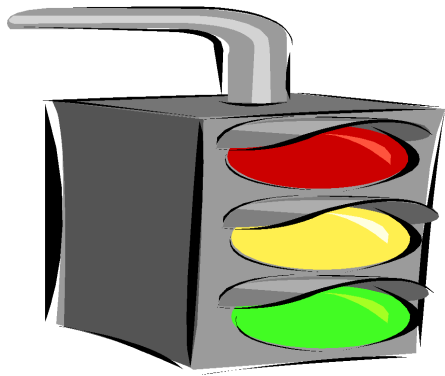
Change the numbers to decimals!

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

Least...

...Greatest

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Questions:
5 - 11, 12 (a,e,h)