Copyright 2002 by Randy Glasbergen.   www.glasbergen.com

47236
× 520
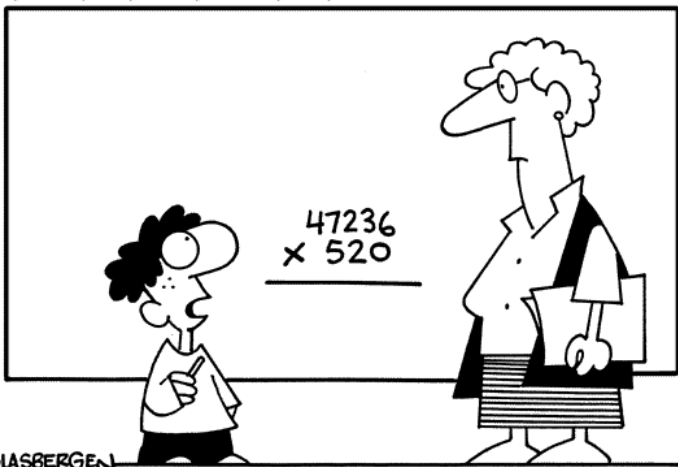
—GLASBERGEN—

"Aren't there enough problems in the world already?"

Warm up
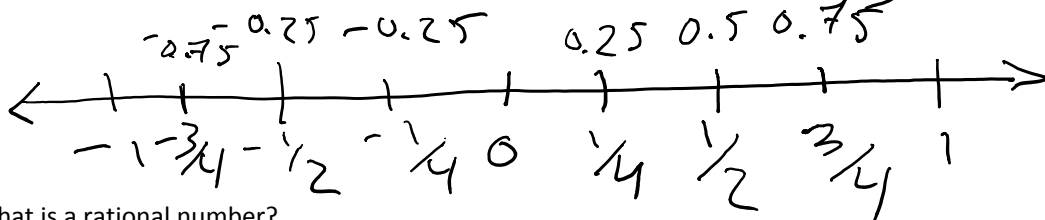a) Draw a number line from
   -1 to 1
   label -½ and ½
        -¼ and ¼
        -¾ and ¾
b.) change to a decimal underneath

-0.75 -0.25 -0.25   0.25 0.5 0.75

$$-1 \quad -\tfrac{3}{4} \quad -\tfrac{1}{2} \quad -\tfrac{1}{4} \quad 0 \quad \tfrac{1}{4} \quad \tfrac{1}{2} \quad \tfrac{3}{4} \quad 1$$

What is a rational number?

any number that can be written as a fraction
in the form $\dfrac{a}{b}$ $b \neq 0$

Are fractions rational numbers? What about mixed Fractions?

yes   yes

Are whole numbers rational?

$\dfrac{5}{1}$ yes

Which decimals are rational?

decimals that terminate (end) or
repeat can be made into fraction
so they are rational

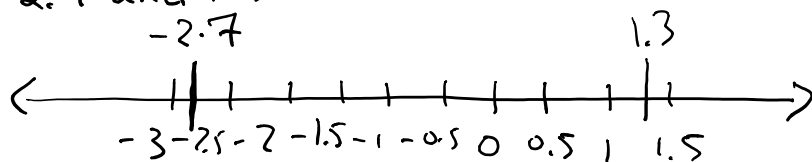$\dfrac{3}{4} = 0.75$ $-\dfrac{1}{3} = -0.\overline{3}$

so they are rational

$$\frac{3}{4} = 0.75 \qquad -\frac{1}{3} = -0.\overline{3}$$
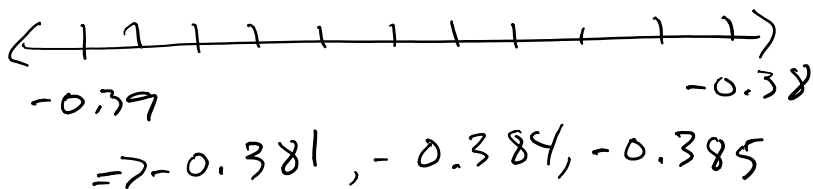
What is an irrational number? Give 2 examples?

π , $\sqrt{2}$ → decimal that neither ends or repeats.

Ex.1) Write 3 rational numbers between each pair of numbers using a number line.

a.) -2.7 and 1.3

-2.7   1.3

-3 -2.5 -2 -1.5 -1 -0.5 0 0.5 1 1.5

=> 0.5, 1, -2

b.) -0.38 and -0.39

-0.39   -0.38

=> -0.381 , -0.384, -0.385

Ex.2 Order these numbers from greatest to least. Use a number line

a.) $0.54, -0.3, -0.\overline{3}, -1.9, 0, 0.22$

-0.5 -0.3 -0.19 0 0.22 0.5   1   0.54   -0.\overline{3}

=> $0.54, 0.22, 0, -0.19, -0.3, -0.\overline{3}$

b.) $\frac{5}{9}, \frac{8}{3}, \frac{7}{10}$ find a common denominator

$$\frac{5 \times 10}{9 \times 10}, \quad \frac{8 \times 30}{3 \times 30}, \quad \frac{7 \times 9}{10 \times 9}$$

③ 50 , ① 240 , ② 63   => 8, 7, 5,

$$\underset{\underset{\overline{90}}{\frac{50}{90}}}{\overset{\overset{7\times 10}{\textcircled{3}}}{}}, \underset{\underset{\overline{90}}{\frac{240}{90}}}{\overset{\overset{\wedge 30}{\textcircled{1}}}{}}, \underset{\underset{\overline{90}}{\frac{63}{90}}}{\overset{\overset{10\times 9}{\textcircled{2}}}{}} \Rightarrow \frac{8}{3}, \frac{7}{10}, \frac{5}{9}$$

HW p.101 #6-8, 10, 12, 14df, 17, 20a, 24d