

DAY - 3

Worksheet-2 (contd.)

STANDARD FORM OF A RATIONAL NUMBER

Absolute value



Worksheet-2

Q7. Express $(-64/256)$ as a rational number with denominator 8.

Sol. To get 8 in the denominator we must divide 256 by 32.

$$\frac{-64 \div 32}{256 \div 32} = \frac{-2}{8}$$

Thus, $\frac{-64}{256} = \frac{-2}{8}$ is the required rational number.

Q8. Find equivalent forms of the rational numbers having a common denominator.



$$(ii) \frac{1}{7}, \frac{2}{8}, \frac{3}{14}.$$

Sol. LCM of 7, 8, 14 is 56.

$$\frac{1}{7} = \frac{1 \times 8}{7 \times 8} = \frac{8}{56}.$$

$$\frac{2}{8} = \frac{2 \times 7}{8 \times 7} = \frac{14}{56}$$

$$\frac{3}{14} = \frac{3 \times 4}{14 \times 4} = \frac{12}{56}$$

$$\text{Thus, } \frac{1}{7} = \frac{8}{56}, \frac{2}{8} = \frac{14}{56} \text{ and } \frac{3}{14} = \frac{12}{56}.$$

Now let us watch a video on standard form of a rational number.

It's URL is : https://youtu.be/nG-VdF_XaLU

Standard form of rational number



$$\frac{175}{225} = \frac{7}{9}$$

7 and 9 have no common factor

Numerator and denominator are
co-prime

STANDARD FORM OF A RATIONAL NUMBER :-



A rational number p/q is said to be in the standard form if q is positive and the integers 'p' and 'q' have their highest common factor as 1.

e.g. rational number $-2/3$ is in the standard form as its denominator 3 is positive and numerator and denominator -2 and 3 have highest common factor as 1.

STEPS FOR MAKING STANDARD FORM OF A RATIONAL NUMBER

Step 1. Make the denominator positive.

Step 2. Find the HCF m of p and q . If $m = 1$, then $\frac{p}{q}$ is the required form.

Step 3. If $m \neq 1$, then divide both the numerator and the denominator by m . The rational number $\frac{p \div m}{q \div m}$ so obtained is the required standard form.

EXAMPLES



Example 7: Express $\frac{-22}{-55}$ in the standard form.

Solution: **Step 1.** $\frac{-22 \times (-1)}{-55 \times (-1)} = \frac{22}{55}$

Step 2. HCF of 22 and 55 is 11.

$$\frac{22 \div 11}{55 \div 11} = \frac{2}{5} \text{ which is the standard form.}$$

Example :- Express $\frac{84}{-20}$ in the standard form.



Solution:-



Step 1.

$$\frac{84 \times (-1)}{-20 \times (-1)} = \frac{-84}{20}$$



Step 2. H.C.F. of 84 and 20 is 4

$$\frac{-84 / 4}{20 / 4} = -\frac{21}{5} \text{ which is the standard form.}$$

DO THESE TWO EXAMPLES IN YOUR CLASSWORK NOTEBOOK.

FIND x SUCH THAT THE RATIONAL NUMBERS IN EACH OF THE FOLLOWING PAIRS ARE EQUIVALENT

(i) $\frac{x}{12}, \frac{5}{6}$

(ii) $\frac{15}{x}, \frac{-3}{8}$

Solution:

(i) $\frac{x}{12}, \frac{5}{6}$ will be equivalent if

$$6 \times x = 5 \times 12$$

$$x = \frac{5 \times \cancel{12}^2}{\cancel{6}} = 5 \times 2 = 10$$

Hence, $x = 10$.

(ii) $\frac{15}{x}, \frac{-3}{8}$ will be equivalent if

$$15 \times 8 = (-3) \times x$$

$$x = \frac{15 \times 8}{-3} = -5 \times 8 = -40$$

Hence, $x = -40$.



DO THESE TWO EXAMPLES IN YOUR CLASSWORK NOTEBOOK.

Worksheet - 3.

Q24 i) $\frac{2}{7} = \frac{8}{-63} = \frac{-}{-63}$

Solu $\frac{2}{7} = \frac{8}{x} = \frac{y}{-63}$

Case I

~~$\frac{2}{7} \Rightarrow \frac{8}{x}$~~ By Cross multiplication.
 $2 \times x = 8 \times 7$
 $x = \frac{8 \times 7}{2} = 28$

Case II

$\frac{2}{7} = \frac{y}{-63}$ By Cross multiplication
 $2 \times (-63) = y \times 7$
 $y = \frac{2 \times (-63)}{7}$
 $= (-18)$

$x = 28, y = -18$

Thus, $\frac{2}{7} = \frac{8}{28} = \frac{-18}{-63}$

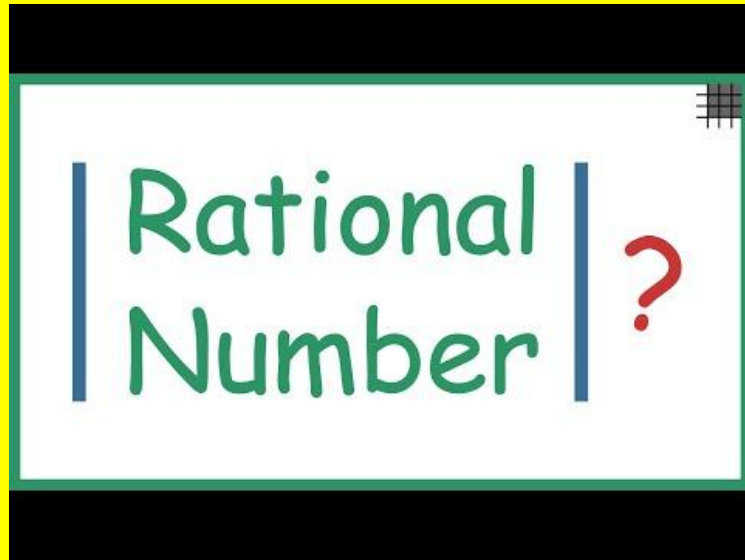
WORKSHEET 3

Q 2



Now let us watch a video on absolute value of a rational number.

It's URL is : <https://youtu.be/MAIVNlwQyho>



ABSOLUTE VALUE

Absolute value of every rational number other than zero is positive. The absolute value of zero is zero itself.

e.g. Absolute value of $\frac{3}{7}$ is $\left| \frac{3}{7} \right| = \frac{3}{7}$

Absolute value of $\frac{-4}{9}$ is $\left| \frac{-4}{9} \right| = \frac{4}{9}$

Absolute value of 0 is $|0| = 0$

DO THESE THREE EXAMPLES IN YOUR CLASSWORK NOTEBOOK.

HOMework

WORKSHEET 2 Q-8 (i)-(iii)

WORKSHEET 3 Q-1,2,3 and 4 (ii)-(iii)

WORKSHEET 4 DO Q-1,3 IN BOOK