Test - Rational Numbers & Linear Equations in One Variable

05 May 2024 13:24

1. Find $\frac{2}{5}\times\frac{-3}{7}-\frac{1}{14}-\frac{3}{7}\times\frac{3}{5}$

2. Find $\frac{4}{7}\times\frac{14}{3}\div\frac{2}{3}$.

3. Which of the following is not true?
   (a) rational numbers are closed under addition.
   (b) rational numbers are closed under subtraction.
   (c) rational numbers are closed under multiplication.
   (d) rational numbers are closed under division.

4. If y be the reciprocal of rational number x, then the reciprocal of y will be
   (a) x (b) y (c) $\frac{x}{y}$ (d) $\frac{y}{x}$

5. $\frac{4}{7}+\left(\frac{-4}{9}\right)+\frac{3}{7}+\left(\frac{-13}{9}\right)$

6. $\frac{3}{7}+\frac{-2}{21}\times\frac{-5}{6}$

7. Verify on below the associativity property for the addition of rational number.
   a. $\frac{1}{2},\frac{2}{3}$ and $-\frac{1}{6}$

8. Solve $5x+\frac{7}{2}=\frac{3}{2}x-14$

9. Solve $5x-2(2x-7)=2(3x-1)+\frac{7}{2}$

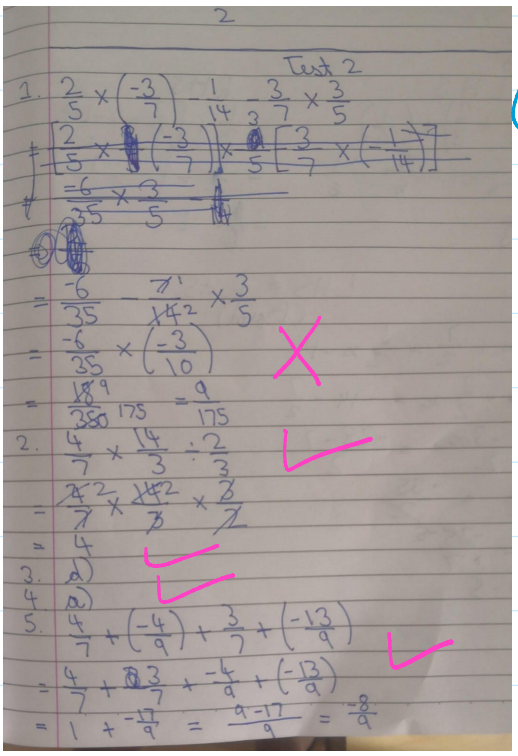
10. Solve : $\frac{x}{2}+\frac{x}{4}+\frac{x}{5}+10000=x$

11. $0.4(3x-1)=0.5x+1$

12. $\frac{2x}{3}-\frac{x-1}{6}+\frac{7x-1}{4}=2\frac{1}{6}$

or

13. $\frac{2x-13}{5}-\frac{x-3}{11}=\frac{x-9}{5}+1$



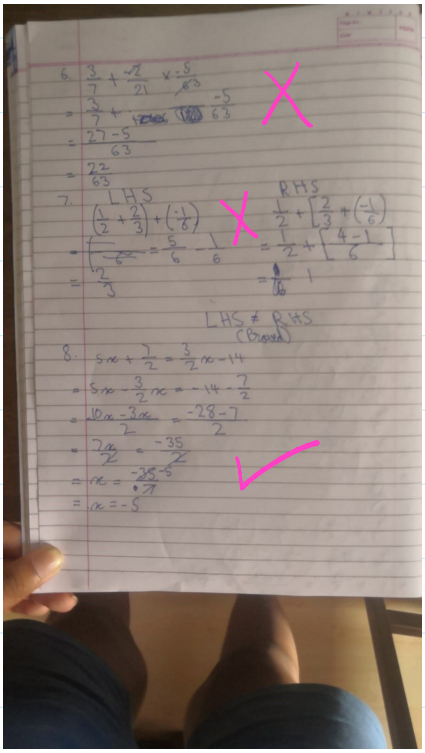
(1) $\frac{2}{5}\times\left(\frac{-3}{7}\right)-\frac{3}{7}\times\frac{3}{5}-\frac{1}{14}$

$-\frac{3}{7}\left(\frac{2}{5}+\frac{3}{5}\right)-\frac{1}{14}$

$-\frac{3}{7}\times\frac{5}{5}-\frac{1}{14}$

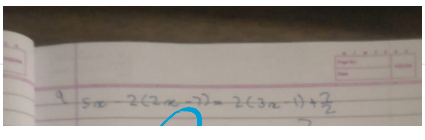
$-\frac{3}{7}-\frac{1}{14}\Rightarrow\frac{-6-1}{14}$

$=\frac{-7}{14}\Rightarrow\frac{-1}{2}$



(6) $\frac{3}{7}+\frac{-1}{\cancel{-2}\ 21}\times\frac{-5}{\cancel{6}\ 3}$

$=\frac{3}{7}+\frac{5}{63}\Rightarrow\frac{27+5}{63}\Rightarrow\frac{32}{63}$

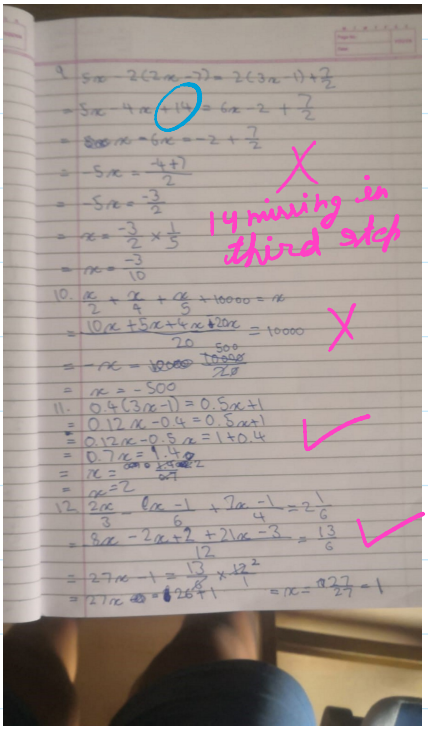


(7) $L.H.S=\left(\frac{1}{2}+\frac{2}{3}\right)+\frac{-1}{6}$

$=\left(\frac{3+4}{6}\right)-\frac{1}{6}$

$=\frac{7}{6}-\frac{1}{6}\Rightarrow\frac{6}{6}\Rightarrow 1$

R.H.S - 1 . /2 . -1 \



$$R.H.S = \frac{1}{2} + \left(\frac{2}{3} + \frac{-1}{6}\right)$$

$$= \frac{1}{2} + \left(\frac{4-1}{6}\right) \Rightarrow \frac{1}{2} + \frac{3}{6}$$

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

(9) $5x - 2(2x-7) = 2(3x-1) + \frac{7}{2}$

$5x - 4x + 14 = 6x - 2 + \frac{7}{2}$

$x + 14 = 6x - 2 + \frac{7}{2}$

$14 + 2 - \frac{7}{2} = 6x - x$

$\frac{28+4-7}{2} = 5x$

$\frac{25}{2} = 5x$

$x = \frac{25}{10} = \frac{5}{2}$

Correct Solutions:

(10) $\frac{x}{2} + \frac{x}{4} + \frac{x}{5} + 10000 = x$

$\frac{10x + 5x + 4x - 20x}{20} = -10000$

$\frac{-x}{} = -10000$

20

$\not{x} = \not{2000000}$

$x = 200000$