Dividing   Two   Fractions   dec 8, 2020

Divide

$$\frac{2}{15} \div \frac{2}{25}$$

fraction 1 →   ← fraction 2

(flip the fraction)

step i. Take reciprocal of 2nd fraction. Change $\div \longrightarrow \times$.

$$\frac{2}{15} \times \frac{25}{2}$$

step ii. multiply (same steps)

$$\frac{2 \times 25}{15 \times 2}$$

simplify, if possible

step iii. Cancel out same # in top and bottom

$$\frac{25}{15} \begin{matrix} \div \\ \div \end{matrix} \begin{matrix} 5 \\ 5 \end{matrix}$$

step iv. List divisors of top 25 : 1, ⑤, 5, 25
List divisor of bottom
     15 : 1, 3, ⑤, 15

$\frac{25}{2}$

$$\boxed{\frac{5}{3}}$$

step v. Identify GCD and divide top and bottom by GCD

remainders

divisions over

Divide

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

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

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

$$\frac{12}{10} \begin{matrix} \div \\ \div \end{matrix} \begin{matrix} 2 \\ 2 \end{matrix}$$

$$\boxed{\frac{6}{5}}$$

$$\frac{12}{2} = 6$$

$12 : 1, ②, 3, 4, 6, 12$ $\frac{12}{1} = 12$

$10 : 1, ②, 5, 10$

$\frac{12}{3}$ 4

$\frac{10}{2}$

Question 9:

$$0 \div \frac{1}{3}$$

num $\rightarrow$ $\dfrac{0}{\frac{1}{3}}$

$\bigcirc$

example :

1st fraction $\rightarrow$ $\dfrac{1}{2}$ $\div$ $\dfrac{2}{3}$ $\leftarrow$ 2nd fraction

numerator $\rightarrow$ $\dfrac{\frac{1}{2}}{\frac{2}{3}}$ $\leftarrow$ denominator

Question 9:

$$\frac{0}{1} \div \frac{1}{3}$$

$$\frac{0}{1} \times \frac{3}{1}$$

$$\frac{0 \times 3}{1 \times 1}$$

$$\frac{0}{1}$$

$$0$$

$$\frac{0}{0} = error$$

$$\frac{0}{1} = 0$$

Question 6:

$$\frac{3}{1} \div \frac{3}{2}$$

$$\frac{3}{1} = 3$$

$$\frac{3}{1} \times \frac{2}{3}$$
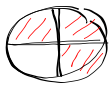
$$\frac{3 \times 2}{1 \times 3}$$

$$2$$

Adding / Subtracting Fractions with Like/Same Denominator

$$\frac{1}{4} \quad + \quad \frac{2}{4}$$

← numerator.

← denominator

step i. add/subtract tops and put over denominator written once.

$$\frac{1 + 2}{4}$$

$$\frac{3}{4}$$

← what you have

← how whole is broken up.

Subtract

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

step i. add/subtract tops and put over denominator written once.

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

$$\frac{1}{4}$$

$$- \frac{2}{4} = \boxed{\frac{-2}{4}} = \frac{2}{-4} = -0.5$$

$$- \frac{2}{4} + \left(- \frac{3}{4} \right)$$

$$\frac{-2}{4} + \left(\frac{-3}{4} \right)$$

$$\frac{-2 + (-3)}{4}$$

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

You do handout 2 until 12:50

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Add / Subtract   Fractions   with   unlike   Denominators

e.x.

$\frac{2}{4} = \frac{1}{2} = 0.5$

step i. Identify
Lowest common Denominator
(LCD).

ask yourself:
Does the bigger Denom (BD)
divided by smaller denom (SD)
give you an even # ? 2
                    (whole)
                    (no decimal) $\frac{BD}{SD}$

$\frac{1}{4}$ + $\frac{1}{2} \times \frac{2}{2}$

$\frac{1}{4}$ + $\frac{2}{4}$

yes! LCD = BD
no ! LCD = BD × SD

$\frac{4}{2} = 2$ yes

LCD = 4

$\frac{1 + 2}{4}$

step ii. Turn bottom(s) into
LCD by × the bottom(s) by
appropriate number.
※ Do exact same thing to
fraction's top.

$\frac{3}{4}$

step iii. Add/subtract tops
and put over denominator
written once.

+

example :

$$\frac{4 \times 2}{4 \times 3} \quad + \quad \frac{1}{4} \frac{\times 3}{\times 3}$$

$$\frac{8}{12} \quad + \quad \frac{3}{12}$$

$$\frac{8 + 3}{12}$$

$$\frac{11}{12}$$

BD : 4

SD : 3

$$\frac{4}{3} = \boxed{1.3}$$

no

LCD = BD × SD

LCD = 4 × 3

$$\boxed{LCD = 12}$$