

!! अक्की वर Railway पर !!

30/30
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Ratio & Proportion

अनुपात व संव. समानुपात

Ratio
अनुपात

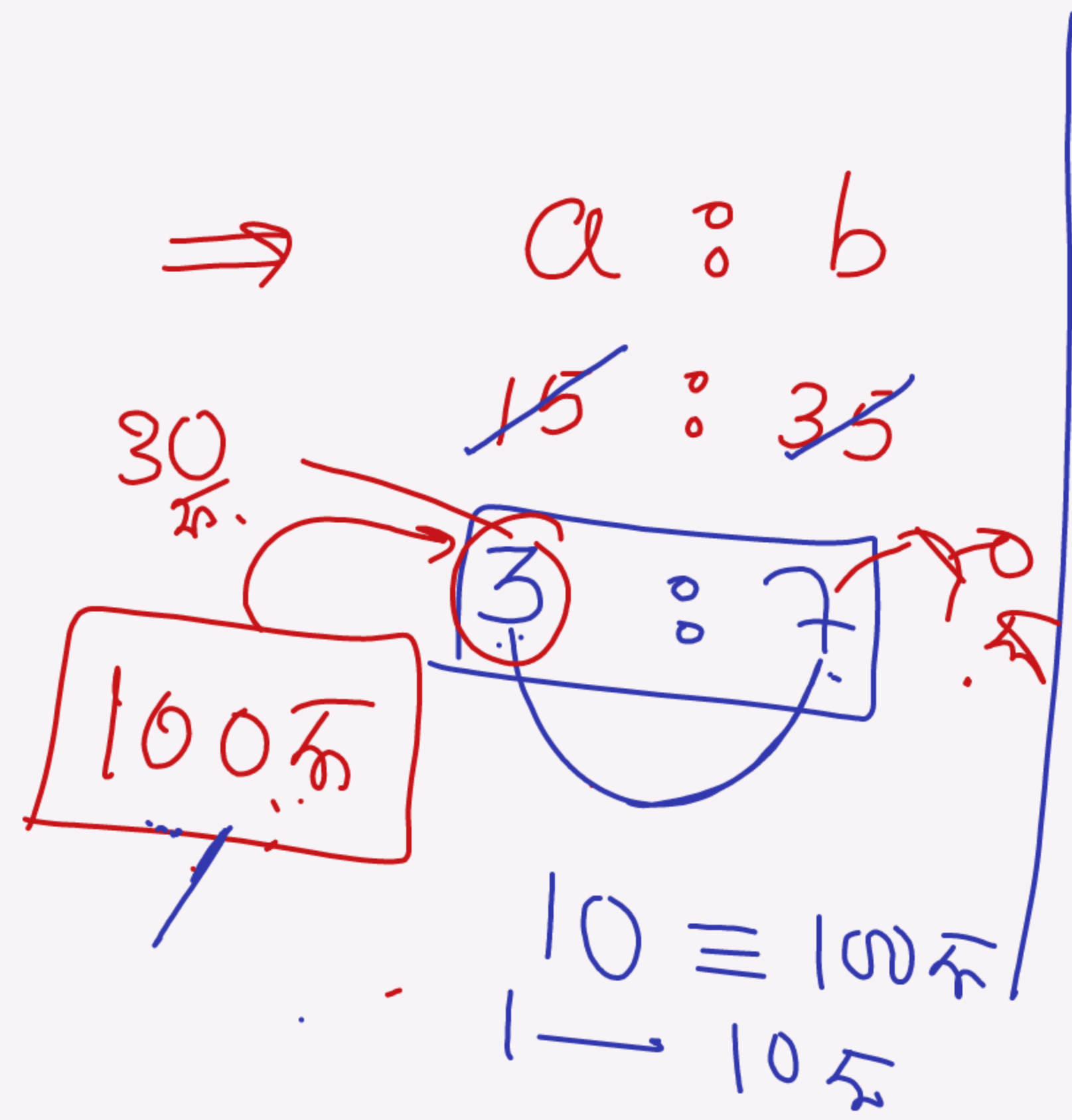
a : b
2 : 3

$$\frac{a}{b} = \frac{2}{3}$$

Proportion
समानुपात

a : b :: c : d

$$\frac{a}{b} = \frac{c}{d}$$



$\Rightarrow a = 5 \text{ L}$ unit same
 $b = 2 \text{ kg}$

$a : b$

 $5x : 5y$

$a : b \longrightarrow$ Inverse Ratio

Reciprocal Ratio

A's Income

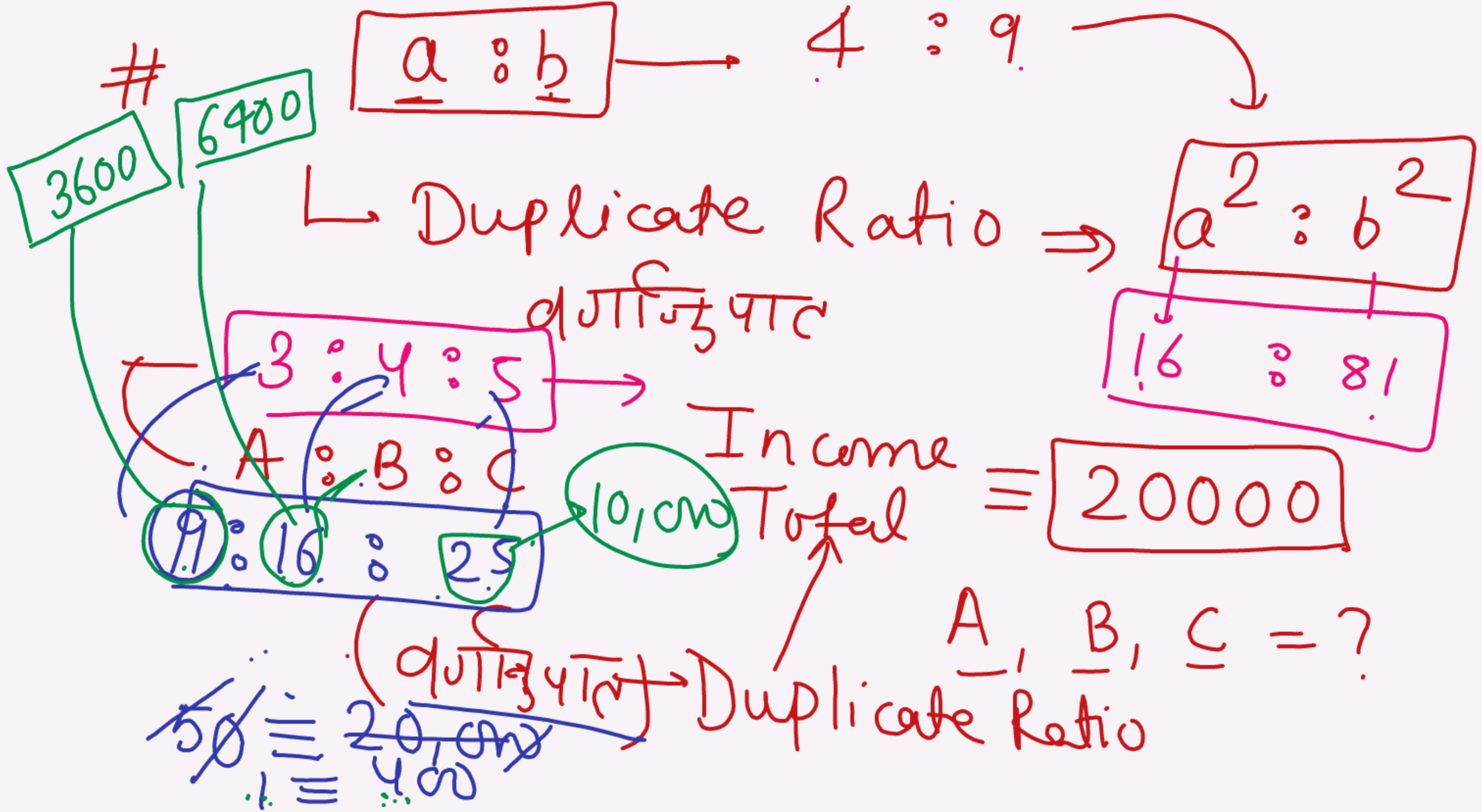
का २ दुना विलोममूलक

B's Income

$b : a$

२० $A \equiv B$

$\frac{A}{B} = \frac{1}{2}$



Sub duplicate Ratio

(दो वर्गों का अनुपात)

$$\sqrt{225} = 15 \quad \text{and} \quad \sqrt{49} = 7$$

Triplicate Ratio $\rightarrow a \circ b$

अतिस्थिति

$$\left(\frac{a^3 \circ b^3}{\quad} \right)$$

$$3 \circ 4$$

$$27 \circ 64$$

Sub triplicate
Ratio

अतिस्थिति

$$a \circ b = \sqrt[3]{a} \circ \sqrt[3]{b}$$

Sub multiple ratio

$$\sqrt[3]{216} : \sqrt[3]{343} : \sqrt[3]{729}$$



6	:	7	:	9
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Compound Ratio

मिश्र अनुपात



$$\begin{matrix} M & & W & & & & M & & W \\ \textcircled{2} & :: & \textcircled{3} & \& & & \textcircled{5} & :: & 2 \end{matrix}$$

$$\boxed{10 :: 6} \quad \text{---} \quad \textcircled{5 :: 3}$$

$$\begin{array}{l} a :: b \\ c :: d \\ \hline ac :: bd \end{array}$$

$$* \quad a \circ b = 4 \circ 5$$

$$b \circ c = 5 \circ 7$$

$$\begin{array}{cccc} a & \circ & b & \circ & c \\ 4 & \circ & 5 & \circ & 7 \end{array}$$

$$\begin{array}{ccc} a \circ & b \circ & c \\ 4 \circ & 5 \circ & 7 \end{array}$$

$$a : b = (4 : 5)^2$$

$$b : c = 10 : 9$$

$$\underline{a : b : c}$$

$$\underline{8 : 10 : 9}$$

$$\frac{6 \circ 9 \circ 12 \circ 14}{a \circ b = 2 \circ \textcircled{3}}$$

$$b \circ c = \textcircled{3} \circ 4$$

$$c \circ d = 6 \circ 7$$

A	B	C	D
2	3	3	3
3	3	4 ²	4 ²
6	6 ₃	6	7

$$\frac{a \circ b \circ c \circ d}{}$$

$$a : b = 3 : 5$$

$$b : c = 7 : 4$$

$$d : c = 2 : 3$$

$$\underline{63 : 105 : 60 : 40}$$

A	B	C	D
3	5	5	5
7	7	4	4
3	3	3	2

Diagram illustrating the derivation of the ratio 63:105:60:40 from the given ratios. The ratios are arranged in columns A, B, C, and D. The values are written in red and blue. A blue bracket connects the 3 in column A and the 5 in column B. A red bracket connects the 7 in column B and the 3 in column C. A red bracket connects the 4 in column C and the 2 in column D. A red dot is placed below the 7 in column B.

$$\begin{array}{rcccc} 4 & : & 1 & : & 18 \\ 8 & : & 2 & : & 36 \\ \hline \end{array}$$

$$A \times \frac{3}{8} = B \times \frac{3}{2} = C \times \frac{1}{12}$$

$\leftarrow \frac{8}{3}$
 $\frac{2}{3}$
 $\frac{12}{1}$

$$A \text{ of } 30\% = B \text{ of } 0.75 = C \text{ of } \frac{1}{4}$$

$$A \times \frac{3}{10} = B \times \frac{3}{4} = C \times \frac{1}{4} = 1$$

$$A = \frac{10}{3}$$

$$B = 4\frac{1}{3}$$

$$C = 4$$

$$\frac{5}{10} : \frac{2}{10} : \frac{6}{10}$$

$$\frac{10}{10} : \frac{4}{10} : \frac{12}{10}$$

H.W.

$$\# \quad \frac{3}{2}a = \frac{4}{3}b = \frac{5}{4}c$$

$$\# \quad 4a \div \frac{2}{3}b \div 3c$$

$$a : b : c = \frac{1}{2} : \frac{1}{3} : \frac{1}{4}$$

$$a : b = \frac{1}{2} : \frac{3}{8}$$

$$b : c = \frac{2}{3} : \frac{7}{9}$$

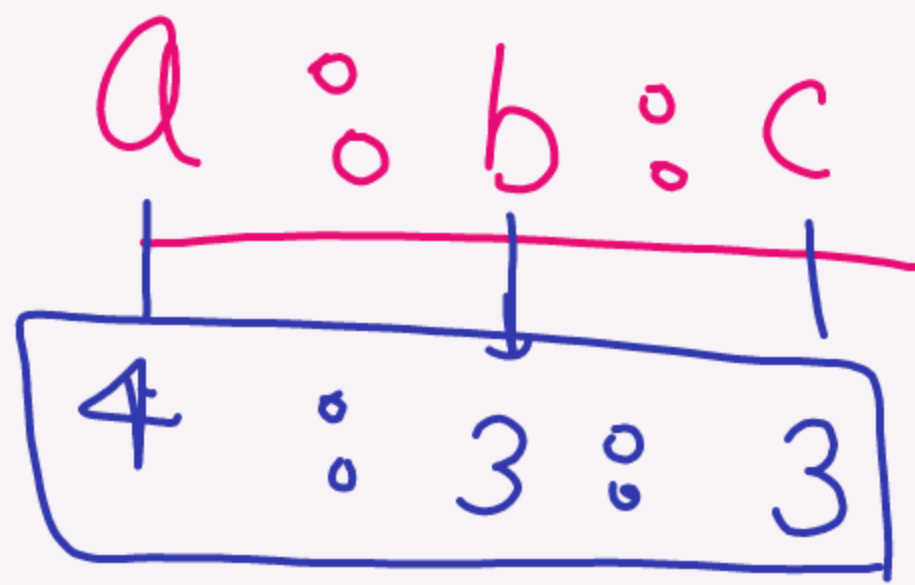
$$\underline{a : b : c}$$

$$c : d = \frac{5}{6} : \frac{3}{4}$$

$$\underline{a : b : c : d}$$

$$a \circ b + c = (2 \circ 3) \rightarrow (5) 2$$

$$b \circ a + c = 3 \circ 7 \rightarrow 10$$



$$a \rightarrow 4$$

$$b + c \rightarrow 6$$

$$b \rightarrow 3$$

$$a + c \rightarrow 7$$

$$b \div a + c \equiv 3 \div 4$$

$$a \div b + c \equiv 5 \div 9$$

$$\underline{a \div b \div c}$$

12:30 PM

Algebra

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