

Compound Interest-01

Compound Interest

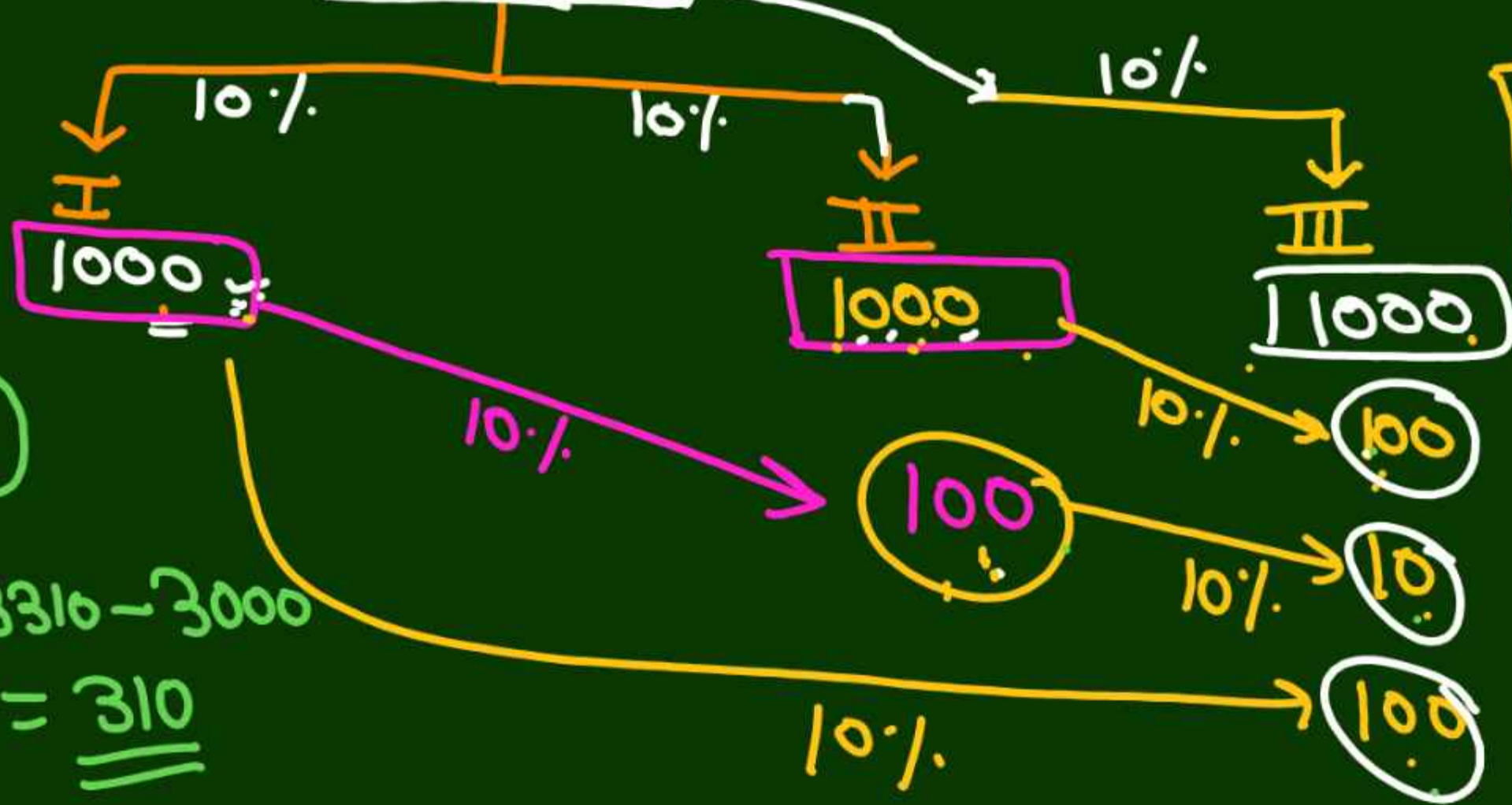
TREE METHOD (CI)

$I^{\text{st}} \text{ year}$

 $SI = CI$

$P = 100000$

$T = 2 \text{ yr}$, $R = 10\%$

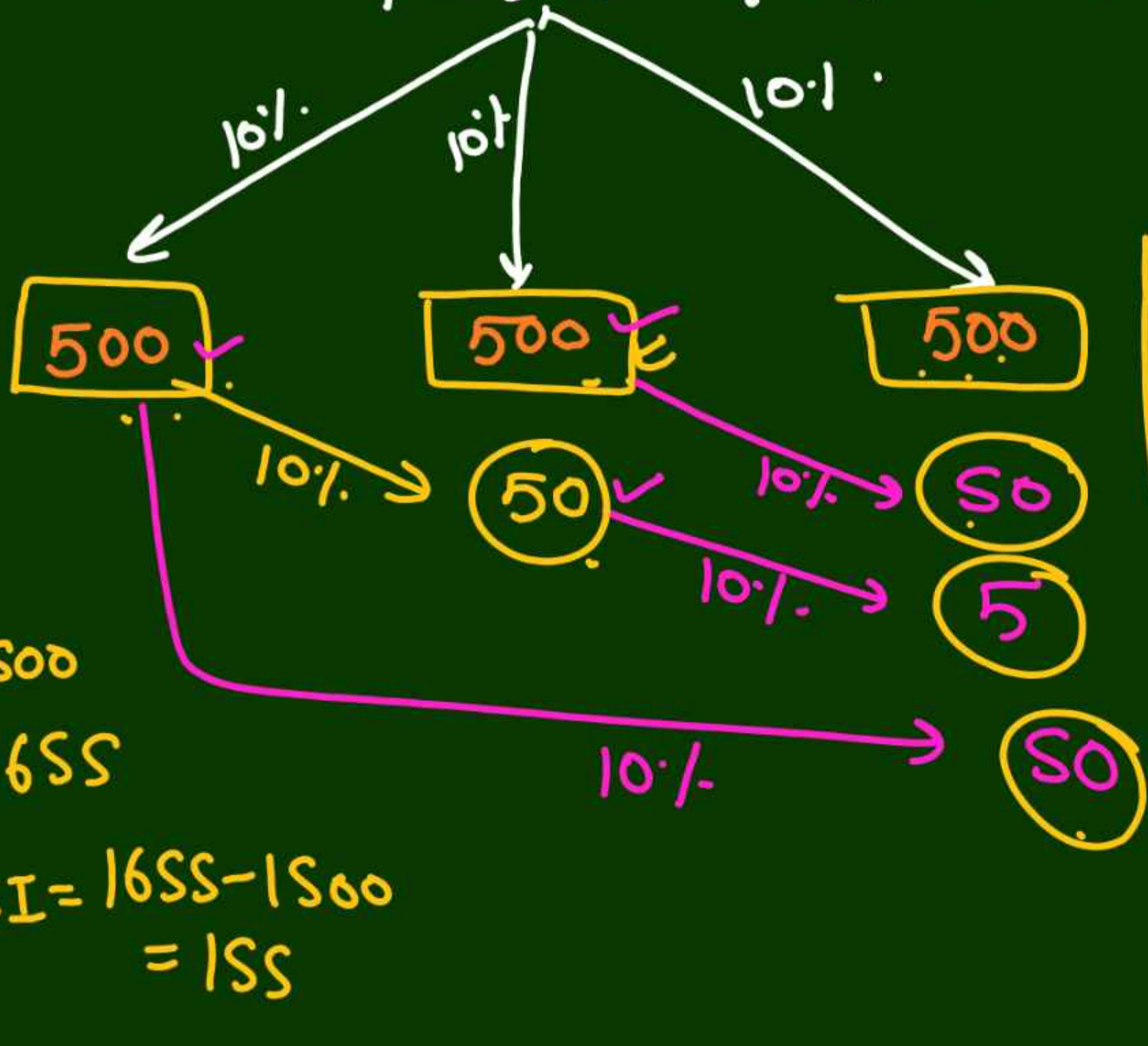


2nd CI = 1100

$3SI = 3000$
 $3CI = 3310$

$3CI - 3SI = 3310 - 3000$
 $= \underline{\underline{310}}$

$P = 5000$ $R = 10\%$ $T = 3Y$



3rd CI = 605

2nd CI = 550

$3SI = 1500$

$3CI = 1650$

$3CI - 3SI = 1650 - 1500$
 $= 150$

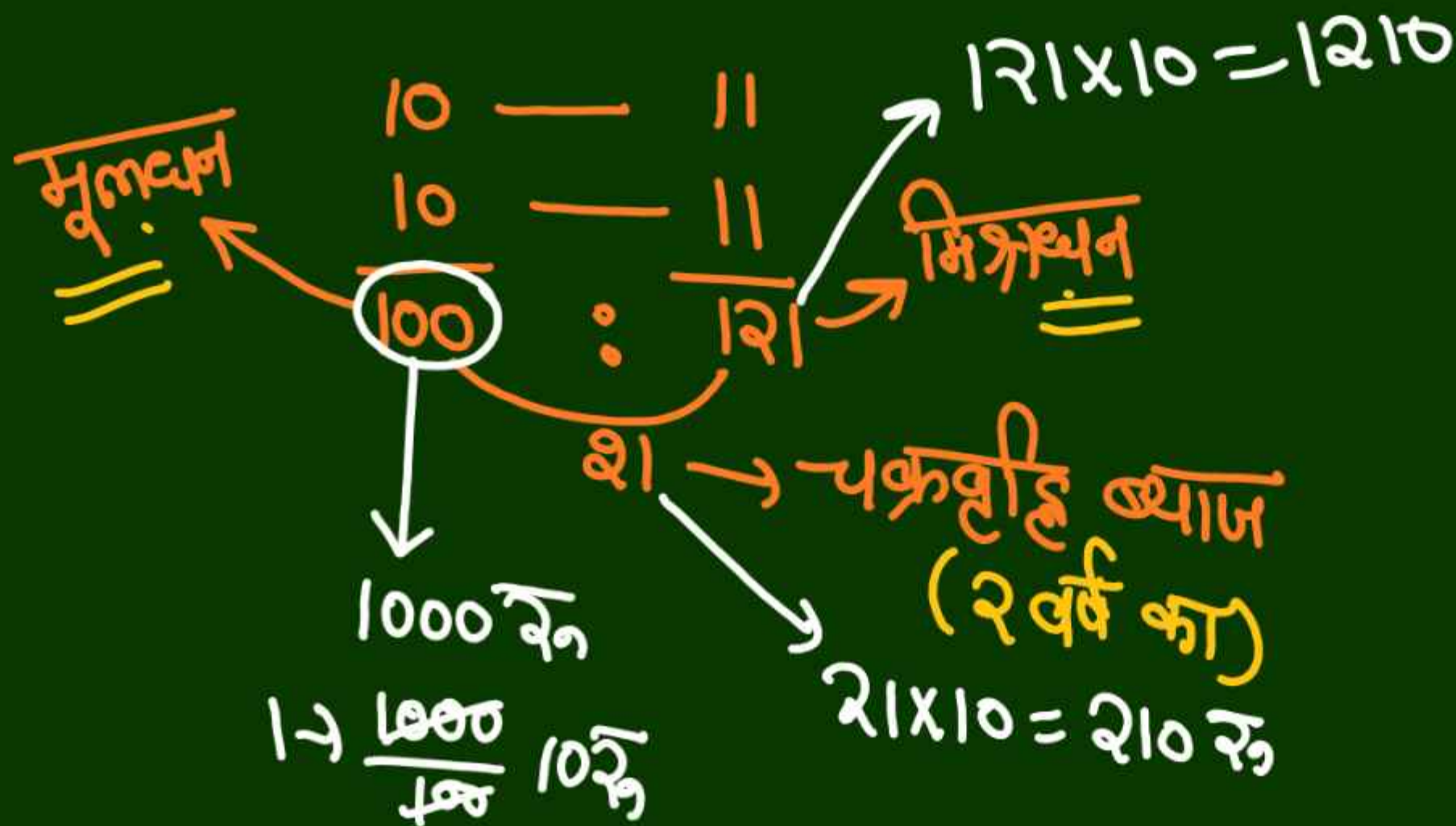
Ratio method

$$P = 1000$$

$$R = 10\%$$

$$T = 2 \text{ years}$$

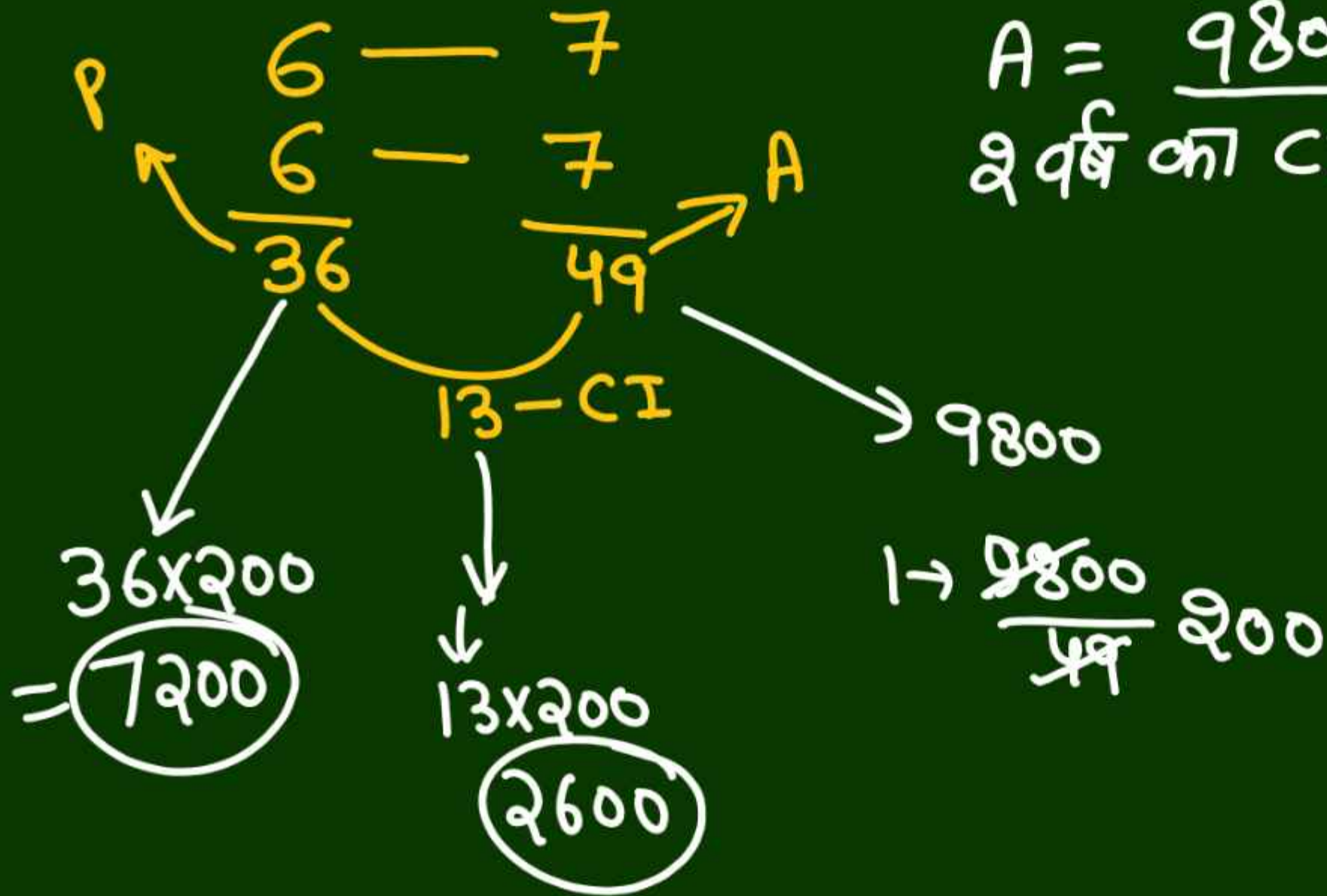
$$10\% = \frac{1}{10}$$



$$16\frac{2}{3}\% = \frac{+1}{6}$$

$$P = ?$$
$$R = 16\frac{2}{3}\%$$
$$T = 2 \text{ वर्ष}$$
$$A = \underline{9800} \text{ रु}$$

2 वर्ष का CI = ?



$$R = 5\% \checkmark$$

$$T = 2\% \checkmark$$

$$\text{2CI} = \quad \%$$

$$\text{2CI} = 5 + 5 + \frac{5 \times 5}{100}$$

$$10 + \frac{25}{100}$$

$$10 + 0.25$$

$$= 10.25\%$$

$$R = 32\%$$

$$T = 2\%$$

$$\text{2CI} = \quad \%$$

$$32 + 32 + \frac{32 \times 32}{100}$$

$$64 + \frac{1024}{100}$$

$$64 + 10.24$$

$$74.24\%$$

$$R = 45\%$$

$$\text{2CI} = \quad \%$$

⑤

$$45 + 45 + \frac{45 \times 45}{100}$$

$$90 + \frac{2025}{100}$$

$$90 + 20.25$$

$$= 110.25\%$$

3 वर्षों का CI का formula.

a% b% C%

$$\left[(a+b+c) + \frac{ab+bc+ca}{100} + \frac{abc}{10000} \right] \%$$

ex

R = 10% , T = 3Y , 3CI = .%

$$10\% = \frac{1}{10}$$

$$\frac{10}{10} - \frac{11}{10} = \frac{1}{10}$$

$$\frac{10}{10} - \frac{11}{10} = \frac{1}{10}$$

$$\frac{10}{10} - \frac{11}{10} = \frac{1}{10}$$

$$\frac{10}{1000} = \frac{1}{100}$$

$$\frac{331}{1000} \times 100 = 33.1\%$$

CI = 331

10% 10% 10%

$$10 + 10 + \frac{10 \times 10}{100}$$

$$= 21\%$$

$$21 + 10 + \frac{21 \times 10}{100} = 31 + 2.1$$

$$= 33.1\%$$

$$30 + \frac{100 + 100 + 100}{100} + \frac{1000}{10000}$$

$$30 + \frac{300}{100} + 0.1$$

$$33 + 0.1$$

$$= 33.1\%$$

$$\left. \begin{array}{l} R_1 = 3\% \\ R_2 = 4\% \\ R_3 = 5\% \end{array} \right\} 3CI = \%.$$

$$\underbrace{3\%} \quad \underbrace{4\%} \quad \underbrace{5\%}$$

$$12 + \frac{12 + 20 + 15}{100} + \frac{60}{10000}$$

$$12 + \frac{47}{100} + 0.006$$

$$12 + 0.47 + 0.006$$

$$12 + 0.476 \Rightarrow 12.476\%$$

$$\begin{array}{r} 0.47 \\ 0.006 \\ \hline 0.476 \end{array}$$

12% वार्षिक

12 महीने = 12%

1 " = $\frac{12}{12}$ 1%

तिमाही 3 " $\rightarrow 1\% \times 3 = 3\%$

द्वमाह 6 " $\rightarrow 1\% \times 6 = 6\%$

अष्टमाह 8 " $\rightarrow 8 \times 1\% = 8\%$

⋮

(HYR) Half yearly Rate
द्वमाह/अर्धवार्षिक दर

$$\text{HYR} = \frac{\text{वार्षिक दर}}{2} \%$$

तिमाही दर (Quarterly Rate)
(QR)

$$\text{QR} = \frac{\text{वार्षिक दर}}{4} \%$$

$R = 8\%$ वार्षिक
तिमाही दर
 $T = 9$ महीने

$$Q.R. = \frac{8\%}{4} = 2\%$$

9 महीने \rightarrow 3m 3m 3m
3 बार

$R = 6\%$ वार्षिक
अर्धवार्षिक व्याज
 $T = 1$ वर्ष 6 महीने

$$HYR = \frac{6}{2} = 3\%$$

2 बार + 1 बार
= 3 बार

$R = 16\%$ वार्षिक

दमाई दर

$T = 15$ महीने

$$\frac{3}{12} \times \frac{1}{4} \times 16 = 4\%$$

$HYR = \frac{16}{2} = 8\%$

6M

8%

6M

8%

3M

4%

$R = 16\%$ per annum.

व्याज: 8 महीने में संशोधित

$T = 2$ वर्ष