

Concentration terms

S-I

(28)

500 ml

1000

2 mol H_2O 1 mol O_2 2 mol O_2

$$2 \times 22.4$$
$$= \underline{44.8}$$

Concentration terms

⑧

7 m NaOH

1000 gm solvent contains 7 mol NaOH

7 × 40 gm NaOH

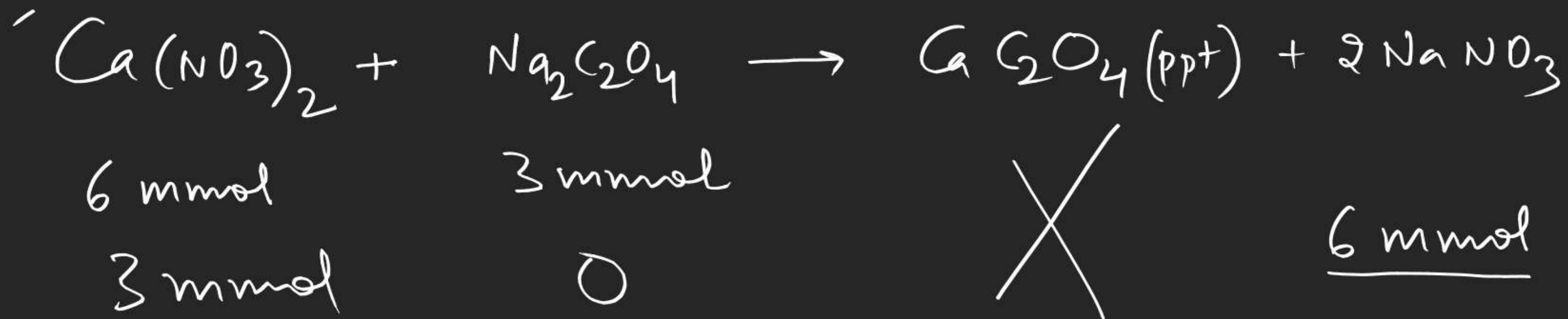
280 gm NaOH

$$W_{\text{solution}} = 1000 + 280 \\ = 1280 \text{ gm}$$

⑨

$$\underline{X_{\text{H}_2\text{O}}} = \frac{n_{\text{H}_2\text{O}}}{n_{\text{H}_2\text{O}} + n_{\text{NaOH}}}$$

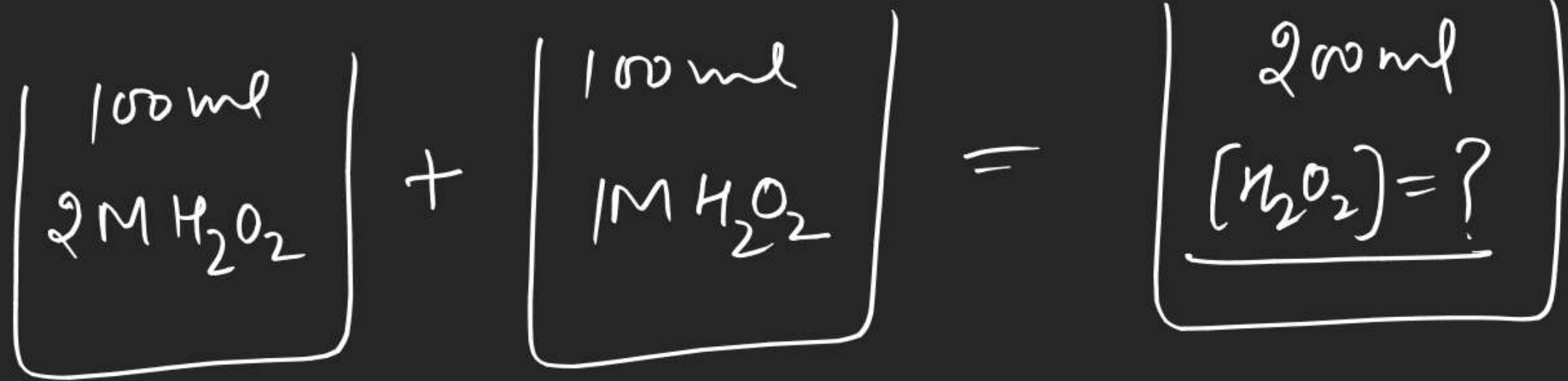
Concentration terms



150ml

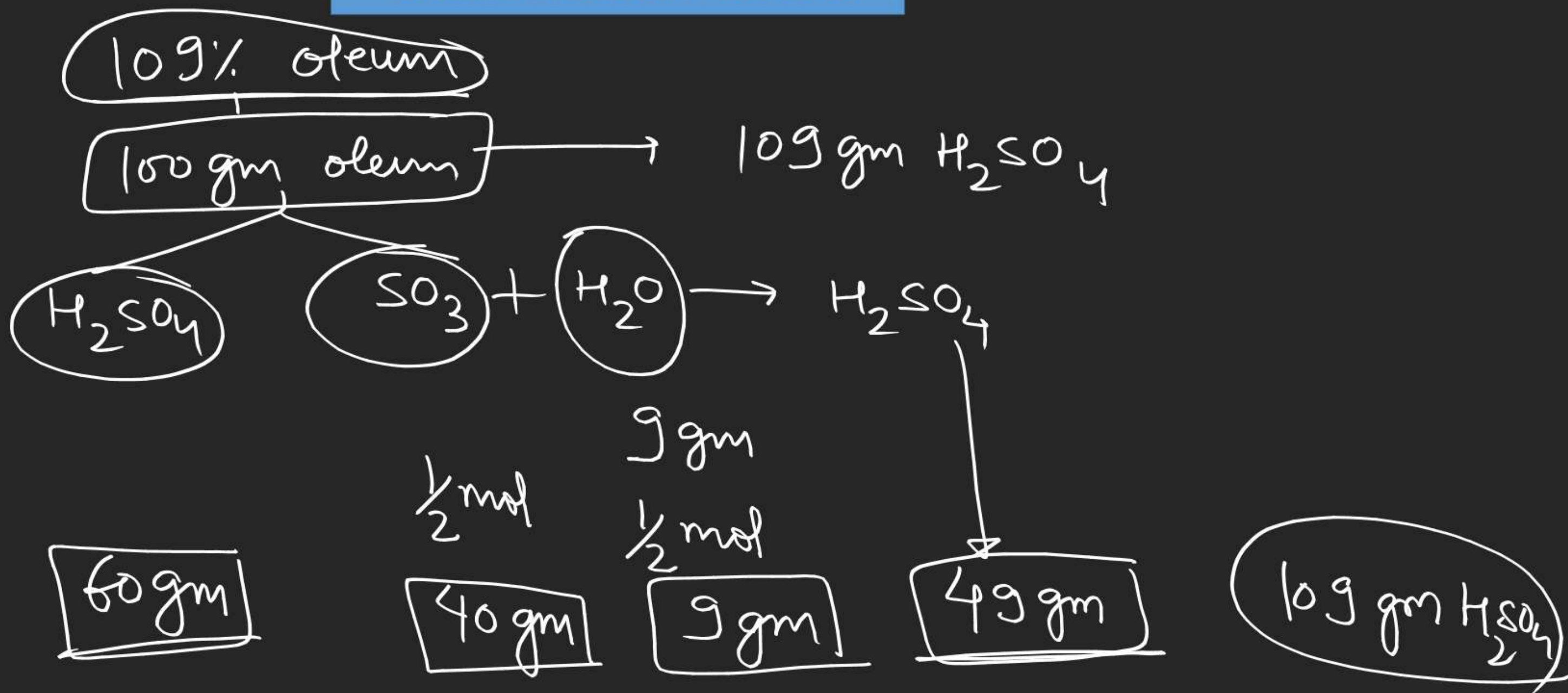
Concentration terms

0-1 (27)



$$\underline{11.35 = M \times 11.35}$$

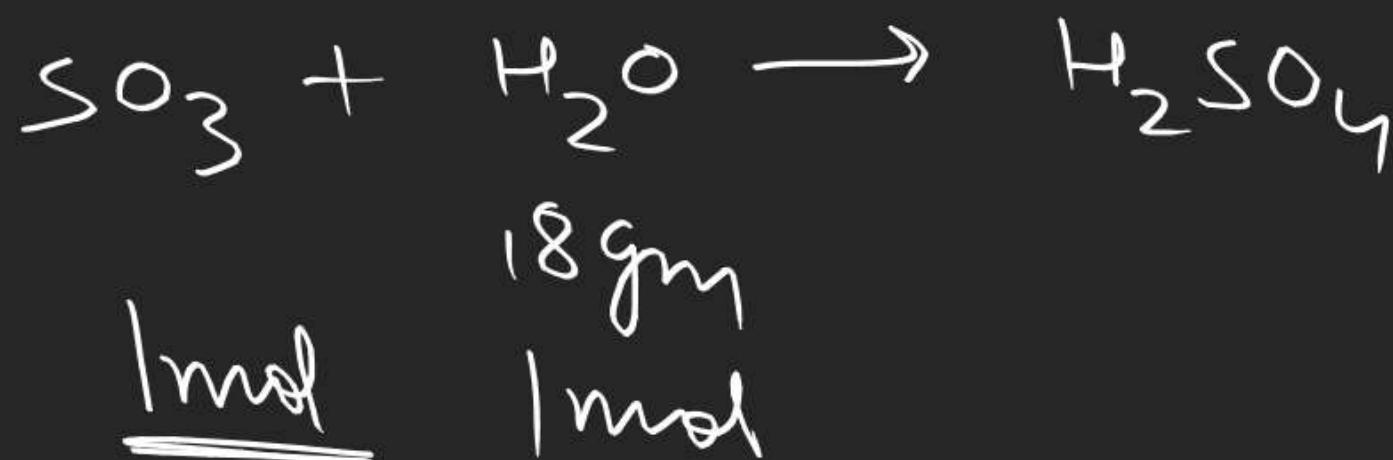
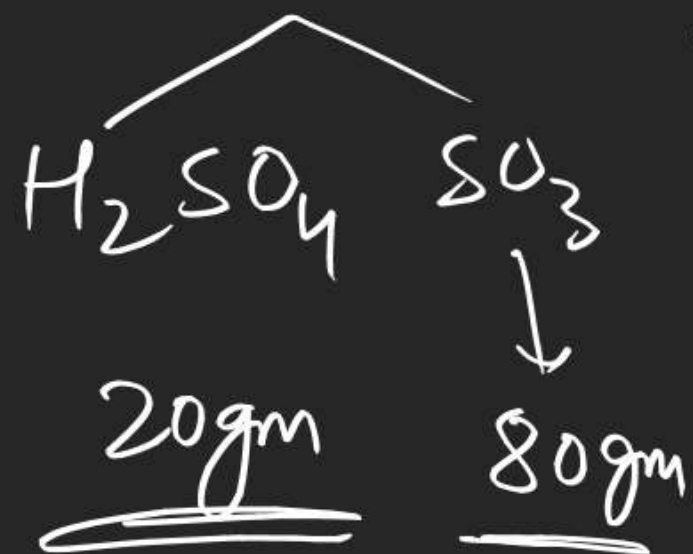
Concentration terms



Concentration terms

$(100 + x)\%$
 \uparrow mass of H_2O which reacts with 100 gm oleum

Q. find mass of H_2SO_4 & SO_3 in 100 gm, 118% oleum?

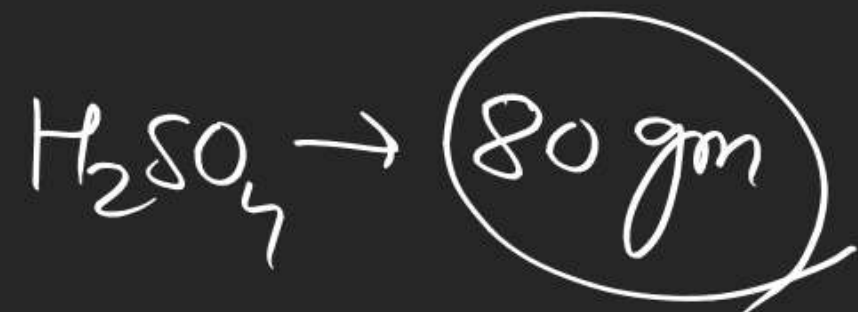


Concentration terms

Q. find % by mass H_2SO_4 in
104.5% oleum?



20 gm



Concentration terms

Q. find % labelling of a mixing containing 200 gm SO₃
with 300 gm H₂SO₄



109%

500%

545%

✓ 109%

145%

Concentration terms

Q. find % labelling of oleum containing equal mass of H_2SO_4 & SO_3 .



111.25%

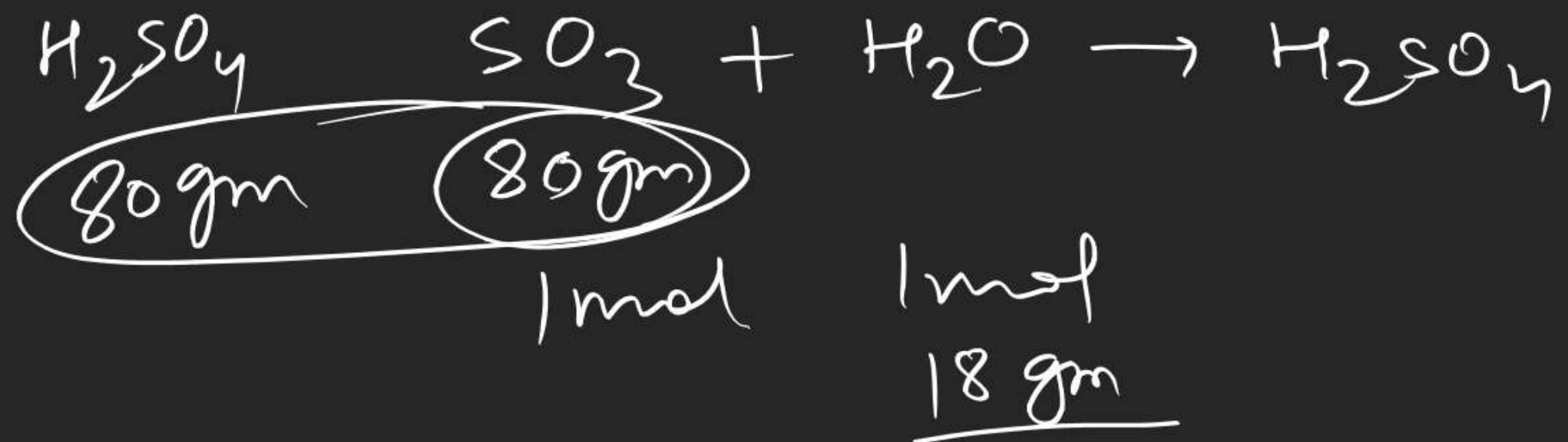
$$\frac{50 \text{ gm}}{80}$$

$\frac{5}{8} \text{ mol}$

$\frac{5}{8} \text{ mol}$

$\frac{5}{8} \times 18 \text{ gm}$

$\frac{90}{8} \text{ gm} \Rightarrow \underline{\underline{11.25 \text{ gm}}}$



$$160 \longrightarrow 18 \text{ gm}$$

$$100 \longrightarrow \frac{18}{160} \times 100 = \frac{180}{16} = \frac{90}{8}$$

Concentration terms

Q. find max & minimum % labelling.



~ 100 gm

122.5%



~ 0

$(100 + x)$

= 100%



$$\frac{100}{80} = 1.25 \text{ mol}$$

1.25 mol

= 22.5 gm

Concentration terms

 \Rightarrow


2 mol

1 mol

3 mol

$$V = \frac{nRT}{P}$$

$$\frac{2RT}{P}$$

$$\frac{1RT}{P}$$

$$\frac{3RT}{P}$$

Same P & T

2x lit

x lit

3x lit

$$\text{let } \frac{RT}{P} = x \text{ lit}$$

2 lit
1 lit
3 lit

Concentration terms



P, T same

5 lit

15 lit

10 lit

~~X~~

V, T same

5 atm

15 atm

10 atm

~~X~~

Concentration terms

Q. 10 lit N_2 is mixed 21 lit H_2 to form $NH_3(g)$
find volume of each gas and volume contraction.



$$31 \text{ lit} = 10 \text{ lit} \quad 21 \text{ lit}$$

$$\underline{17 \text{ lit}} = \textcircled{3 \text{ lit}}$$

0

$$\textcircled{14 \text{ lit}}$$

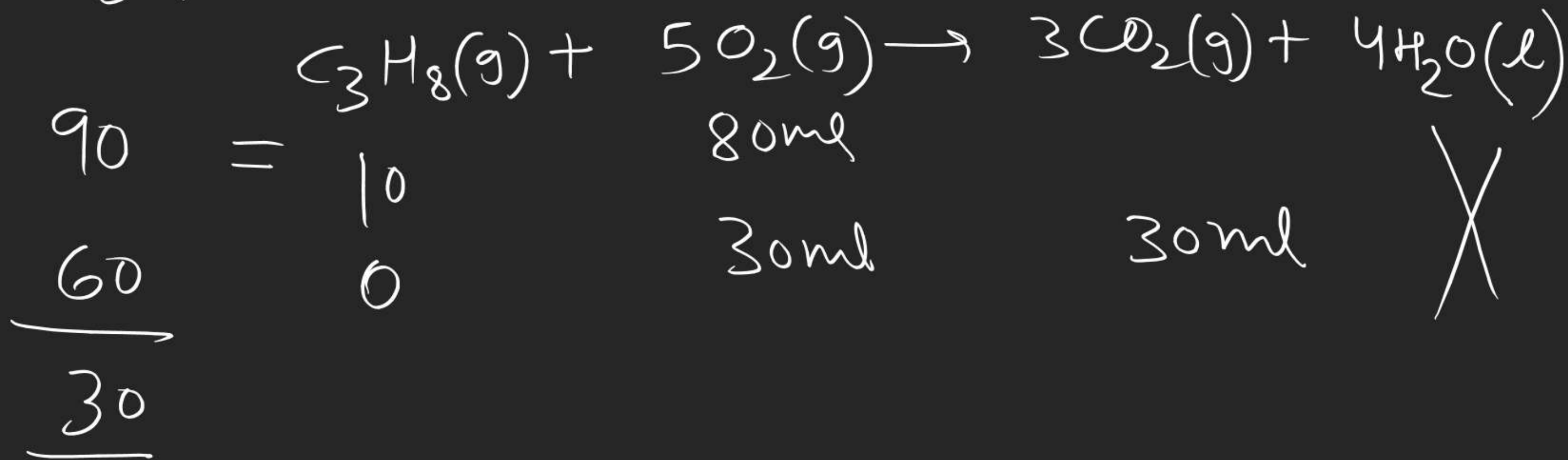
Volume contraction

$$= V_i - V_f$$

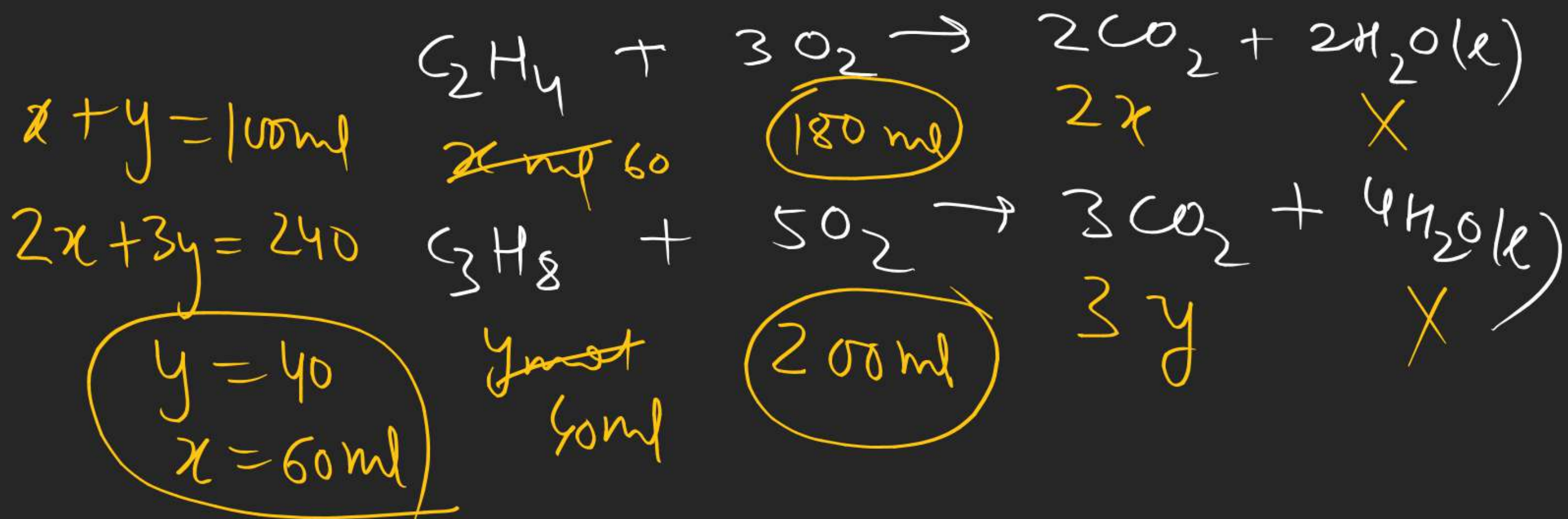
$$= 31 - 17 = \underline{14 \text{ lit}}$$

Concentration terms

Q. 10 ml $C_3H_8(g)$ is mixed with 80 ml $O_2(g)$
at 300K. find volume of each gas & volume
 contraction.

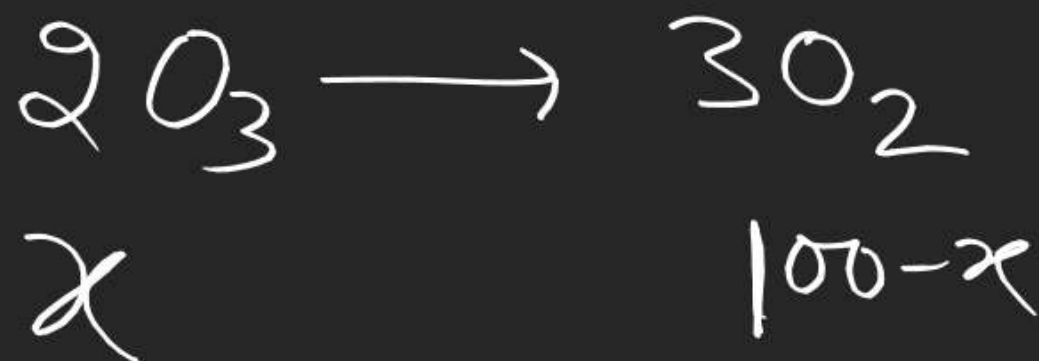
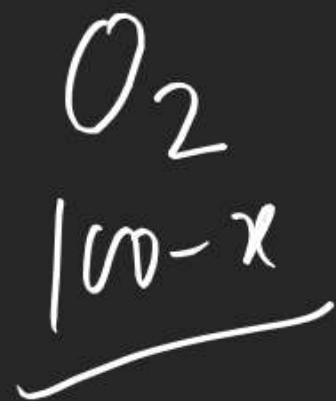


Q. 100 ml mixture of $C_2H_4(g)$ & $C_3H_8(g)$ is burnt with excess O_2 . If volume of CO_2 produced is 240 ml find volume of each in original mixture and volume contraction.



Concentration terms

Q. 100 ml mixture ($O_3 + O_2$) was heated due to which volume increased to 125 ml. find volume of each initially.



0

$$\underline{100-x + \frac{3}{2}x = 125}$$

$$0.5x = 25$$

$$\underline{\underline{x = 50 \text{ ml}}}$$

Concentration terms

0-2 28-33

5-1 29-32

0-11

17-22

Halogen
Sulphur
Nitrogen
Phosphorus