350g → $C_{13}H_{18}O_2$ emp.

$13(12) + 18(1) + 2(16) = 206$ g/mole

$\times 2$

$C_{26}H_{36}O_4$

206 g/mole $\times 2$

MW = 412 g/mole

% → empirical formula → Molecular

Check with mass

emp ≟ MW ?

Sep 25-8:06 AM

## Combustion Analysis

$C_xH_yO_z + O_2 \rightarrow CO_2 + H_2O$

0.255g, 0.616g, 0.560g, 0.306g, 0.866g

① Find moles of each (subscript)

C: $\frac{0.560\text{g } CO_2}{} \left| \frac{1\text{ mole } CO_2}{44\text{g } CO_2} \right| \frac{1\text{ mole C}}{1\text{ mole } CO_2} = 0.01275\text{ mole C}$ (0.153 g C)

H: $\frac{0.306\text{g } H_2O}{} \left| \frac{1\text{ mole } H_2O}{18\text{g } H_2O} \right| \frac{2\text{ mole H}}{1\text{ mole } H_2O} = 0.034\text{ mole H}$ (0.034 g H)

② Total mass of compound $C_xH_yO_z$: $0.255\text{g} - (0.153\text{g C} + 0.034\text{g H}) = 0.068$ g O

$\frac{0.068\text{g O}}{} \left| \frac{1\text{ mole O}}{16\text{g O}} \right. = 0.00425\text{ mole O}$

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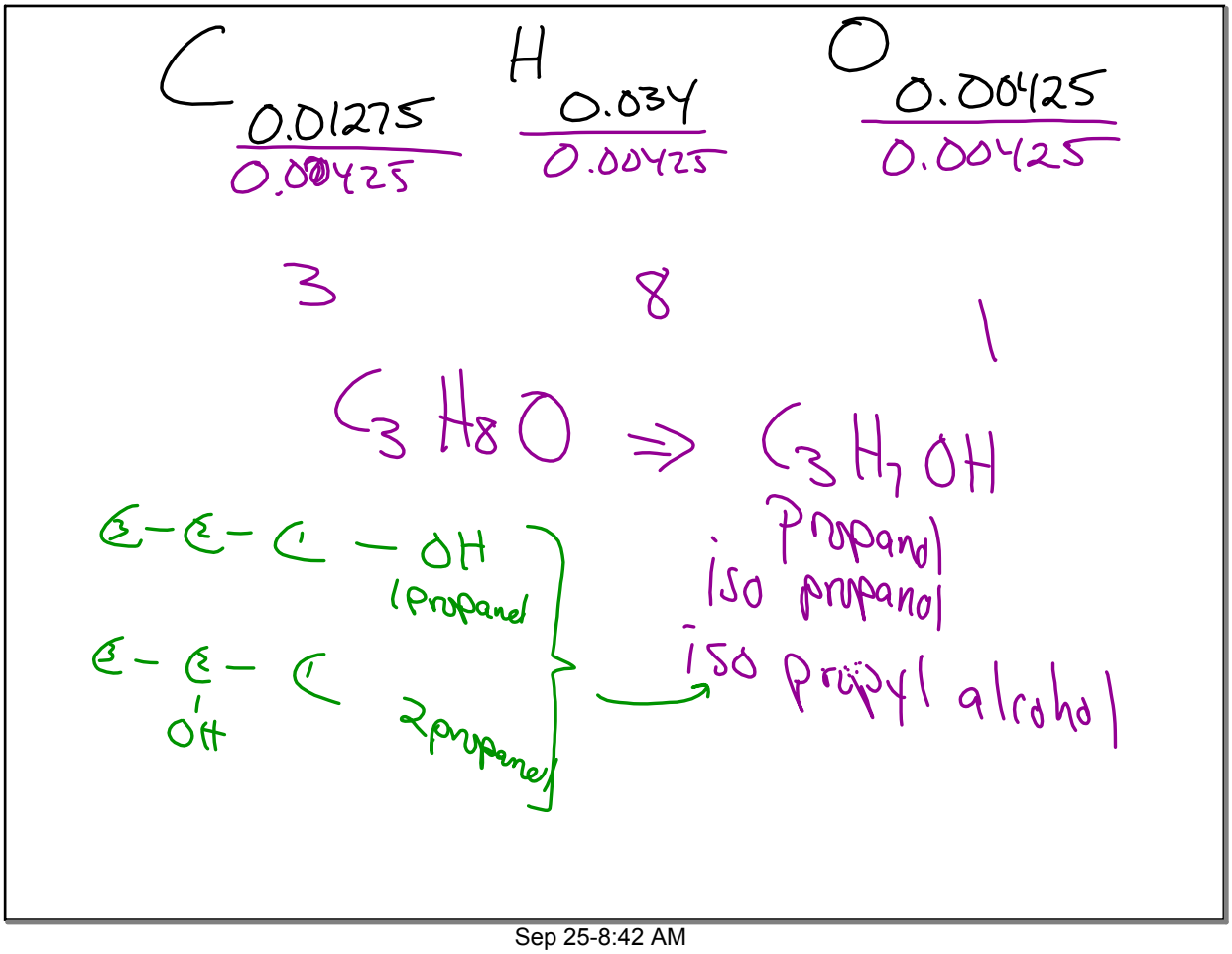


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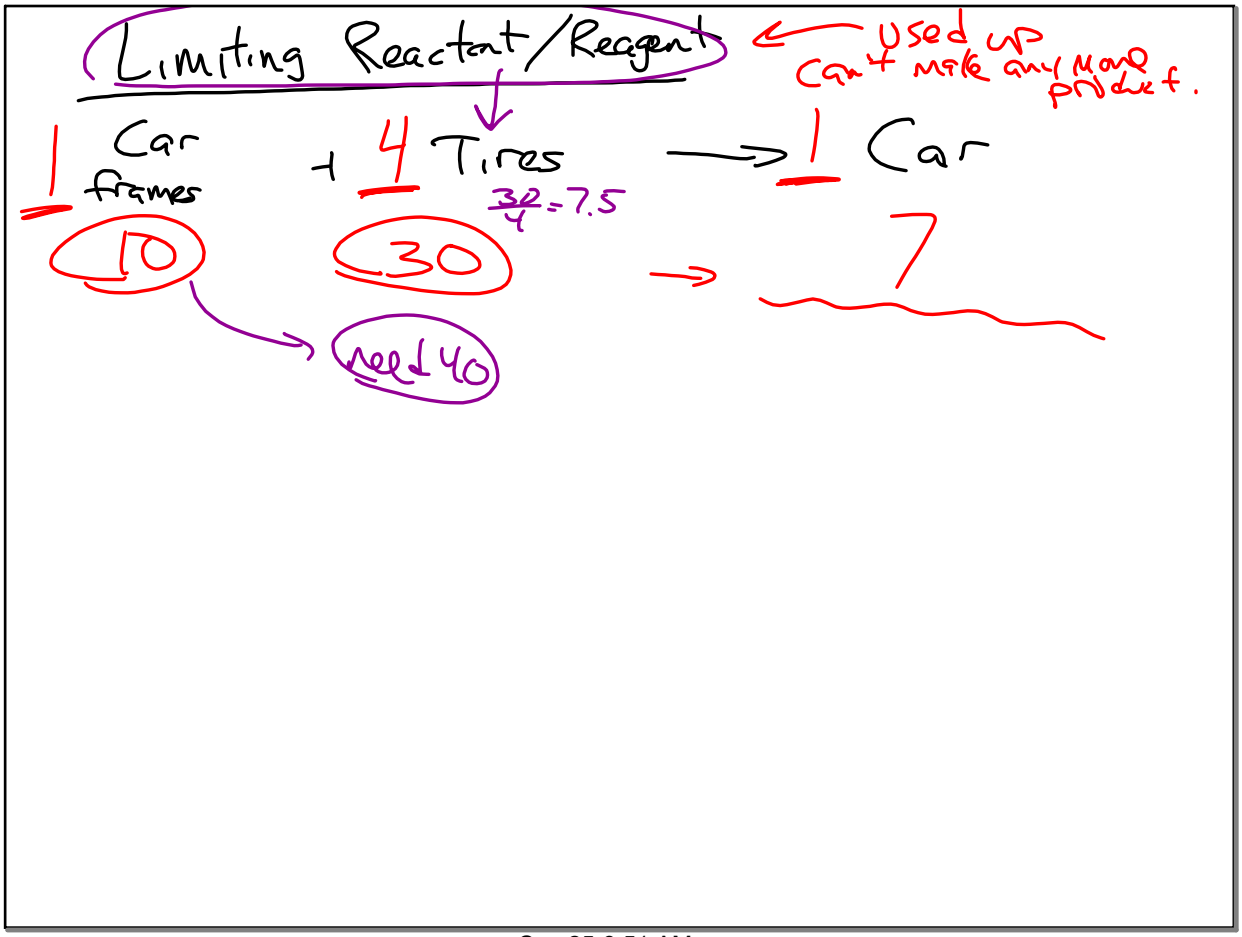


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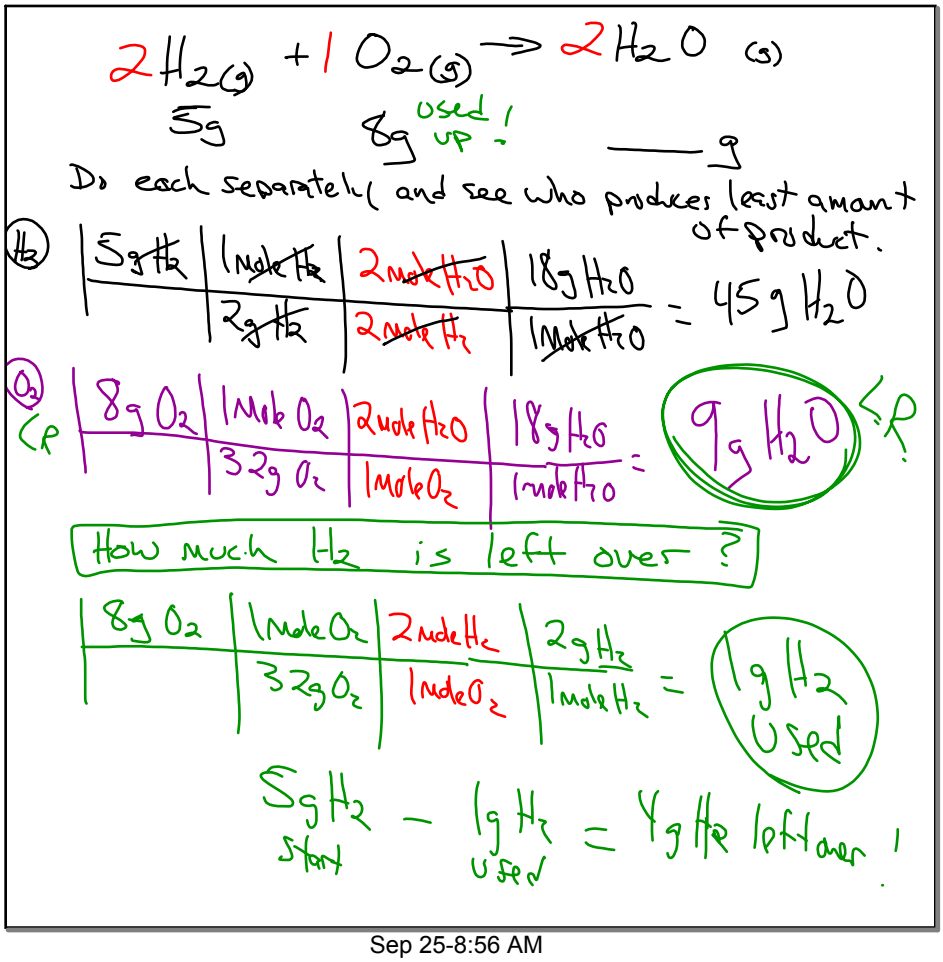


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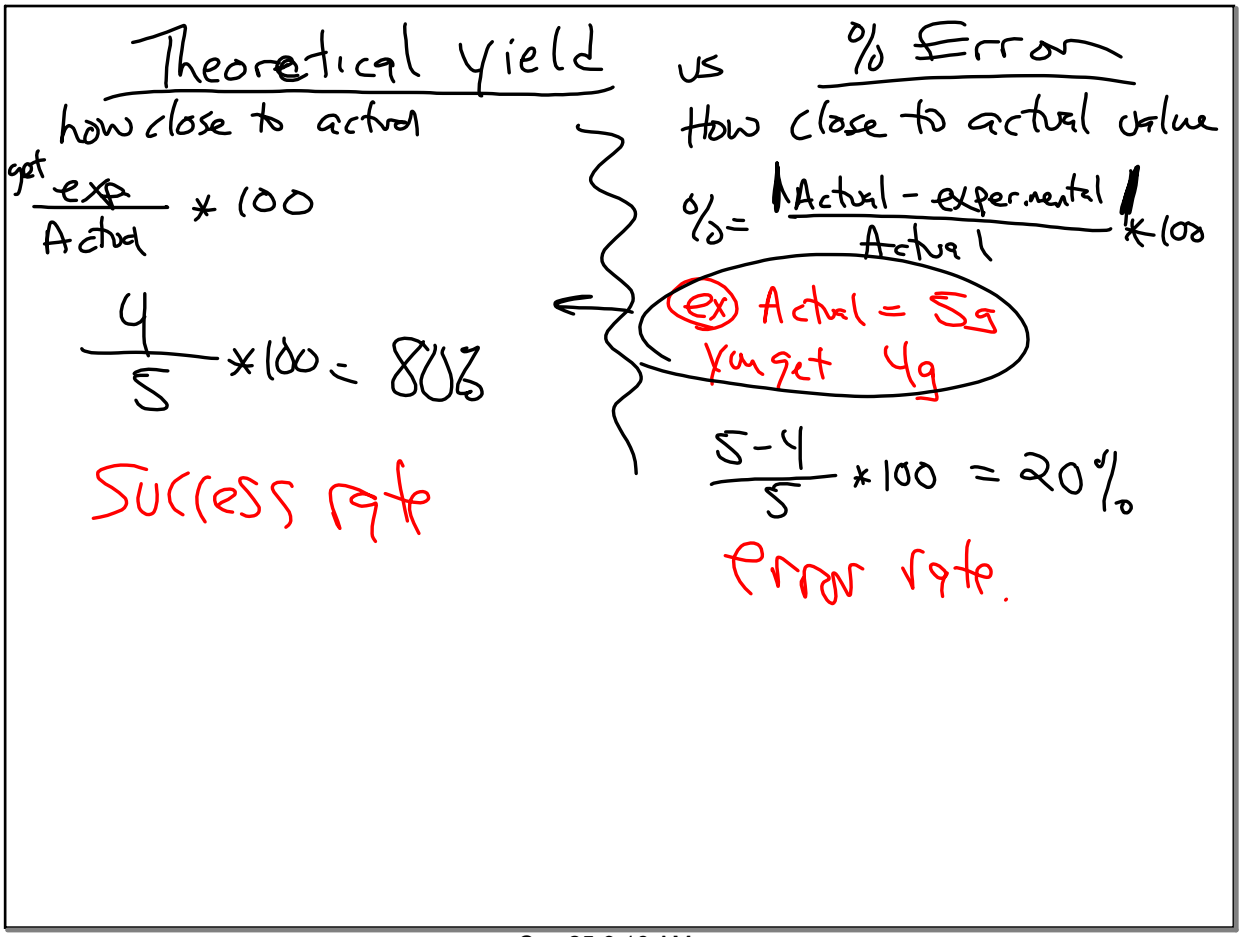


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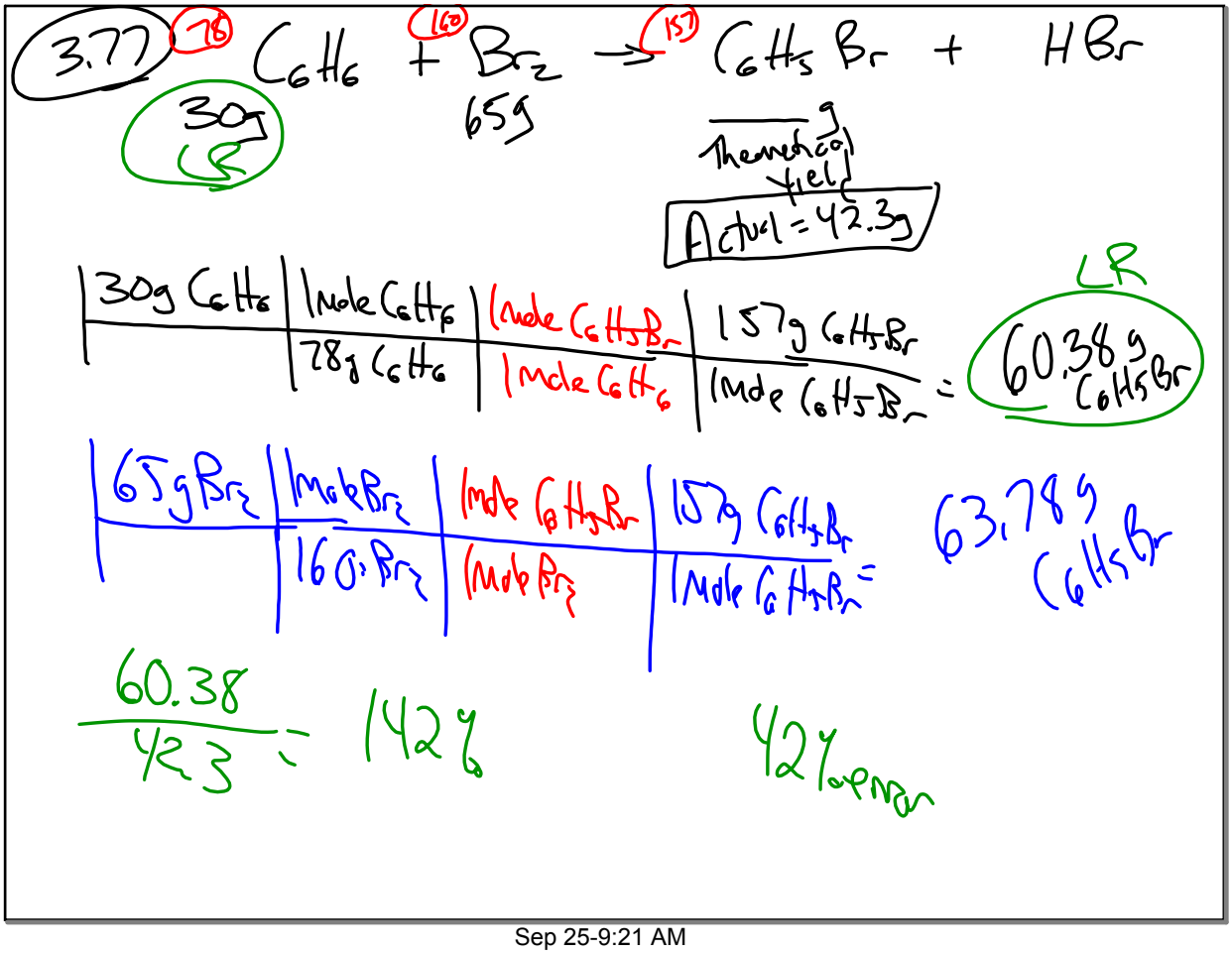


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PS 3-1

# 1-25 ODD

and #10

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