

Correction activité S1.13 : Les molécules organiques

activité 13.1 Analyse centésimale

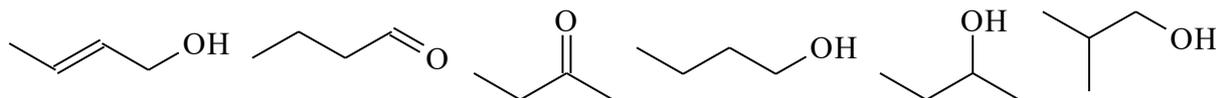
$$C_xH_yO_z : M = 12x + y + 16z = 180 \text{ g.mol}^{-1}$$

$$\%C = \frac{12x}{M} \times 100 \Rightarrow x = \frac{M}{12} \times \frac{\%C}{100} = 6$$

$$\%H = \frac{y}{M} \times 100 \Rightarrow y = M \times \frac{\%H}{100} = 12 \Rightarrow \text{le glucose a pour formule brute } C_6H_{12}O_6$$

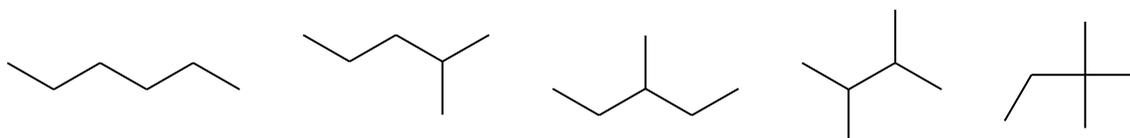
$$\%O = \frac{16z}{M} \times 100 \Rightarrow z = \frac{M}{16} \times \frac{\%O}{100} = 6$$

activité 13.2 Formules topologiques



activité 13.3 Isomérie de chaîne

a°) Les alcanes de formules brutes C_6H_{14} : $n_{\text{ins}} = \frac{2 \times 6 + 2 - 14}{2} = 0$



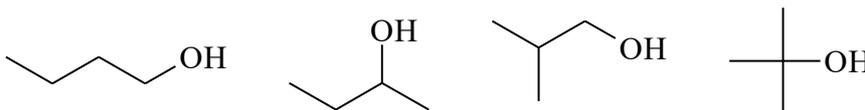
b°) Les **cycloalcanes** de formules brutes C_5H_{10} : $n_{\text{ins}} = \frac{2 \times 5 + 2 - 10}{2} = 1$; donc un seul cycle



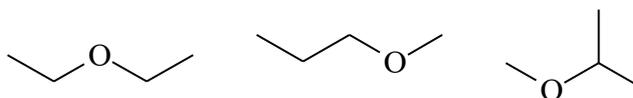
activité 13.4 Isomérie de fonction ou de position

a°) $C_4H_{10}O$:

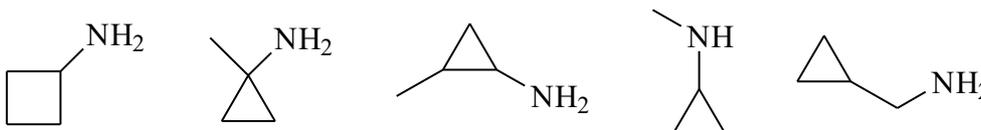
$$\Rightarrow C_4H_9(OH) \Rightarrow y = 9 + 1$$



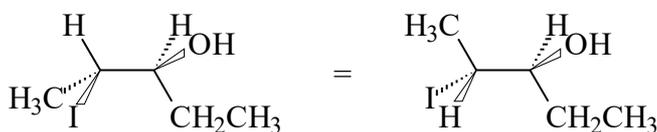
$$n_{\text{ins}} = \frac{2 \times 4 + 2 - 10}{2} = 0$$



b°) C_4H_9N (**cycloalcanes uniquement**) : $\Rightarrow C_4H_7(NH_2) \Rightarrow y = 7 + 1$ $n_{\text{ins}} = \frac{2 \times 4 + 2 - 8}{2} = 1$



activité 13.5 Projection de NEWMAN



liaison C_2 (devant) – C_3 (derrière)