$$\begin{array}{c} O \\ n \, \mathbf{H} - \mathbf{C} - \mathbf{H} \xrightarrow{-\mathbb{E} \$ / \mathbf{H}} & - \left[ -\mathbf{C} \mathbf{H}_2 - \mathbf{O} - \right]_{\mathbf{C} \mathbf{H}_3} + (\mathbf{n} - 1) \, \mathbf{H}_2 \mathbf{O} \\ \mathbf{C} \mathbf{H}_3 & \mathbf{O} \\ n \, \mathbf{HO} - \mathbf{CH} - \mathbf{COOH} & \xrightarrow{\text{(d.4)}} & \mathbf{H} - \left[ -\mathbf{O} - \mathbf{CH} - \mathbf{C} - \right]_n \, \mathbf{OH} \\ \end{array} \right. + (\mathbf{n} - 1) \, \mathbf{H}_2 \mathbf{O} \\ \begin{array}{c} n \, \mathbf{HO} - \mathbf{CH} - \mathbf{COOH} & \xrightarrow{\text{(d.4)}} & \mathbf{H} - \left[ -\mathbf{O} - \mathbf{CH} - \mathbf{C} - \right]_n \, \mathbf{OH} \\ \end{array} \right. + (\mathbf{n} - 1) \, \mathbf{H}_2 \mathbf{O} \\ \end{array}$$

1) H<sub>2</sub>O

$$\begin{array}{c|c} - & CH_2 - CH & \longrightarrow \\ & CH_3COO & + n CH_3OH & \xrightarrow{NaOH} \\ & & CH_3COOCH_3 & OH & OH \\ \end{array}$$

$$\begin{array}{c} CH_2-OH+RCHO \longrightarrow H+ \\ CH_2-OH \end{array}$$
 
$$CH_2-OH$$

$$3 ext{ H}_2 ext{N}$$
  $- ext{C} = ext{H} ext{} ext{} ext{} ext{} ext{N}$   $- ext{R} ext{} ext{} ext{N}$   $- ext{R} ext{} ext{} ext{} ext{} ext{N}$   $- ext{N} ext{H}_2 ext{N}$   $- ext{N} ext{H}_3 ext{N}$   $- ext{N} ext{H}_3 ext{N}$ 

$$R - \stackrel{1}{C}H - COOH + HCl \longrightarrow R - \stackrel{1}{C}H - COOH + Cl^{-1}$$

$$\begin{array}{c} \operatorname{NH_2} & \operatorname{NH_3Cl} \\ | & | \\ \operatorname{R-CH-COOH} + \operatorname{HCl} \longrightarrow \operatorname{R-CH-COOH} \end{array}$$

$$\begin{matrix} NH_2 & NH_2 \\ | & | \\ R-CH-COOH+NaOH \longrightarrow R-CH-COONa+H_2O \end{matrix}$$