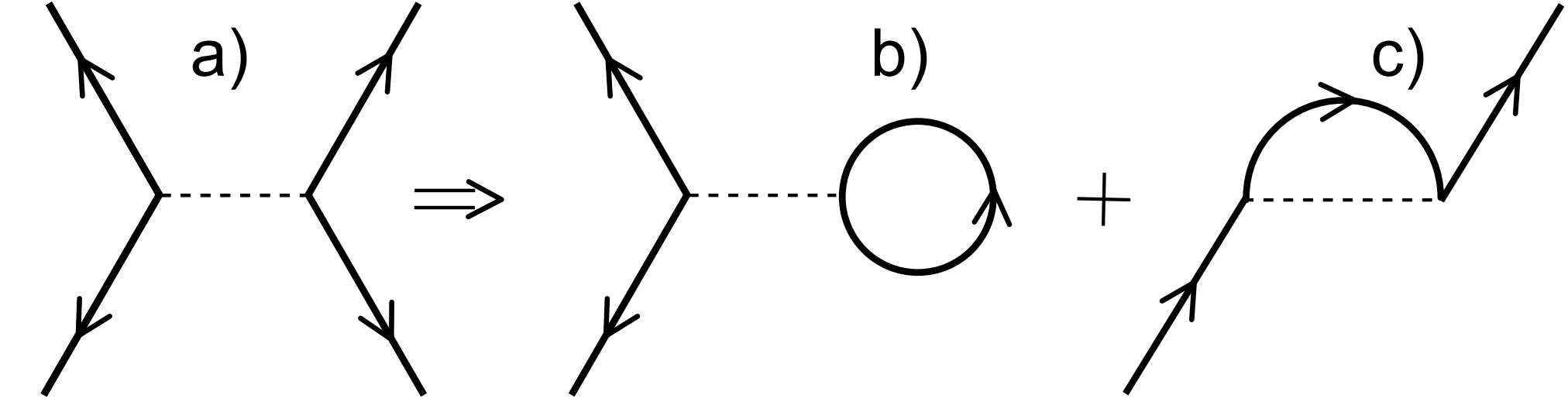

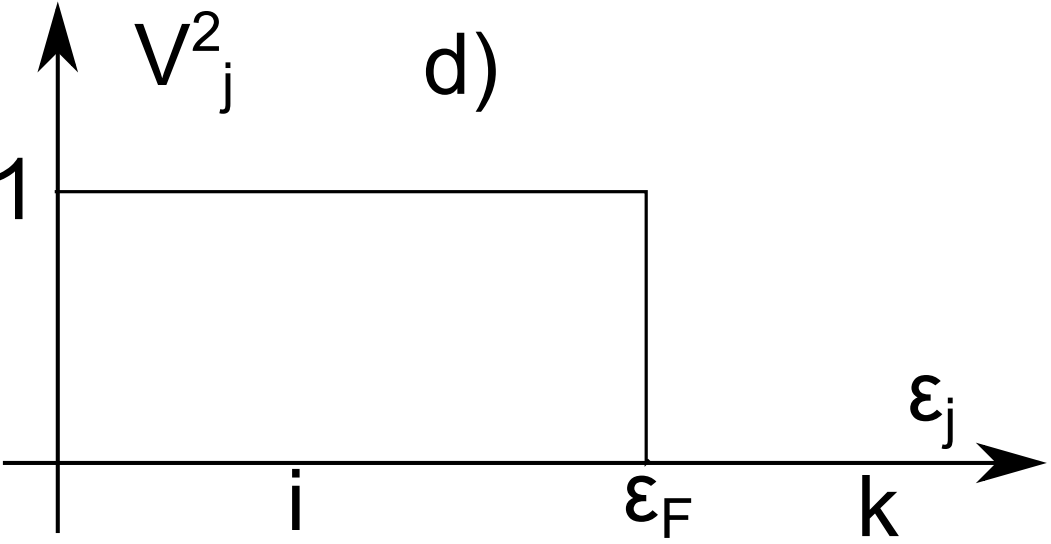

$$U(r) = \int d\mathbf{r}'\rho(r')v(|\mathbf{r}-\mathbf{r}'|)$$

$$\rho(r) = \sum_i |\varphi(\mathbf{r})|^2$$

$$U_x(r,r') = -\sum_i \varphi_i^*(\mathbf{r}')v(|\mathbf{r}-\mathbf{r}'|)\,\varphi_i(\mathbf{r})$$