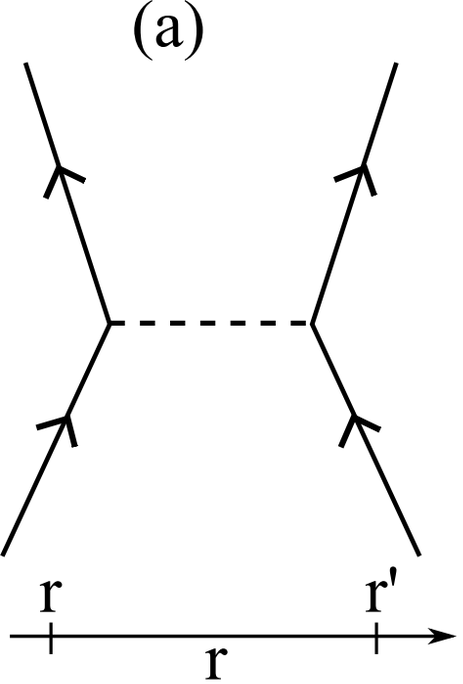
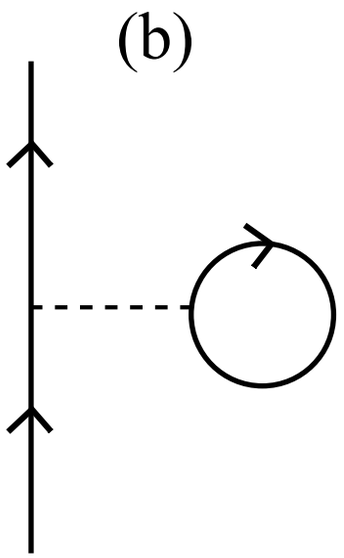
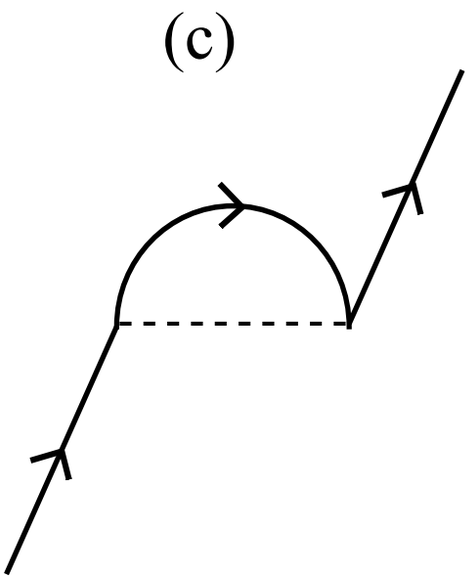
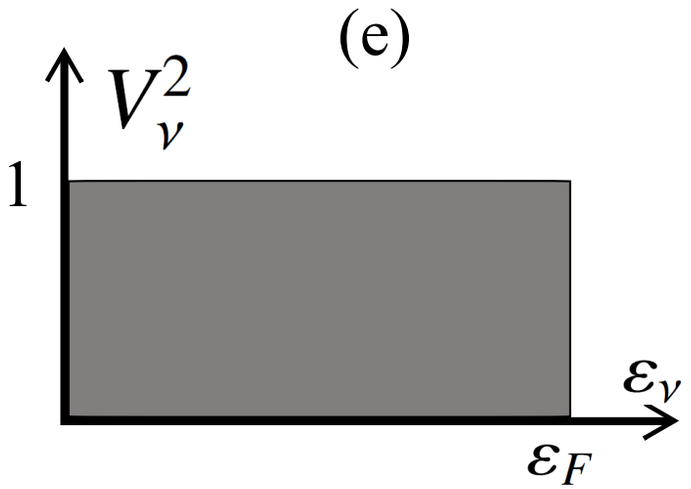


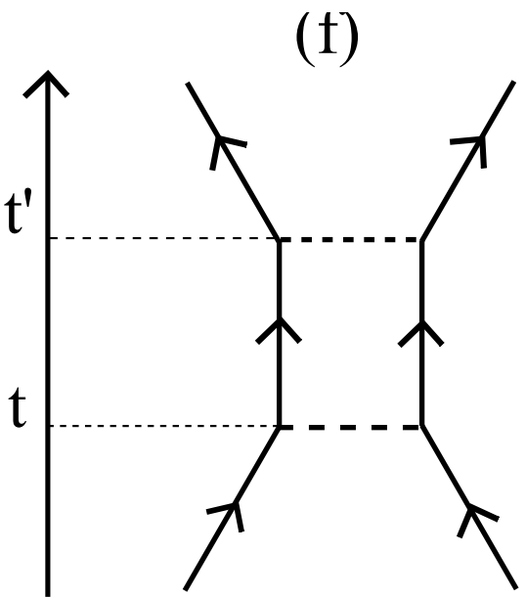


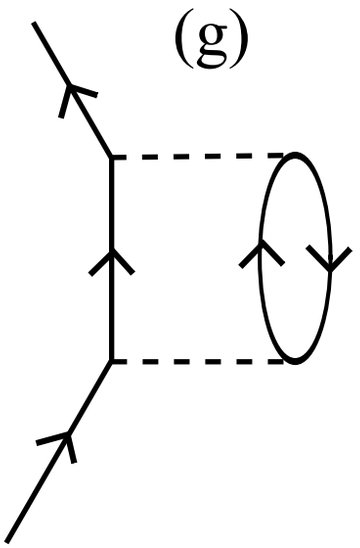


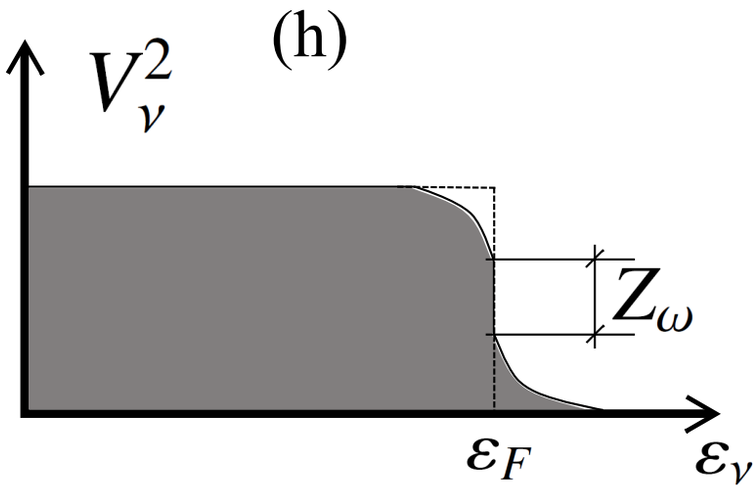
(d) $U(r) = \int d\mathbf{r}\rho(r')v(|\mathbf{r}-\mathbf{r}'|)$

(d') $U_x(r,r') = -\sum_{i\,(\epsilon_i<\epsilon_F)} \varphi_i^*(\mathbf{r}')v(|\mathbf{r}-\mathbf{r}'|)\varphi_i(\mathbf{r})$









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