

$$\textcircled{P} \int \cos \sqrt{x} \, dx$$

$$\rightarrow I = \int \cos \sqrt{x} \, dx$$

$$\sqrt{x} = t \quad \Rightarrow \quad \frac{1}{2\sqrt{x}} dx = dt$$

$$dx = 2t dt$$

$$I = \int 2t \cos t \, dt$$

$$I = 2 \left[t \int \cos t \, dt - \int \left\{ \frac{dt}{dt} \right\} \cos t \, dt \right] dt$$

$$I = 2t \sin t + 2 \cos t + C$$

$$I = 2\sqrt{x} \sin \sqrt{x} + 2 \cos \sqrt{x} + C$$