



$$\psi(p)=\phi\int \nu(p(x))dx$$

$$p_t(x)=t\delta_x(\tilde{x})+(1-t)p(x)$$

$$\begin{aligned} &\left.\frac{d}{dt}\right|_{t=0}\phi\int \nu(p_t(x))dx\\ &=\phi'\int \nu(p(x))dx\left(\int q(x)\nu'(p(x))dx-\int p(x)\nu'(p(x))dx\right) \end{aligned}$$

$$H(x)=-\mathbb{E}[\log(p(x))]=-\int p(x)\log(p(x))dx$$

$$\phi(a)=-a\quad \nu(y)=y\log(y)$$

$$\phi'(a)=-1\quad \nu'(y)=1+\log(y)$$

$$-\int p(x)\log p(x)dx\left(\int q(x)\left[1+\log p(x)\right]dx-\int p(x)\left[1+\log p(x)\right]\right)$$