Exercise 5°
Exercise 5: Greven, $d_{Hell}(P,Q) = (\frac{1}{2} \int (\sqrt{P(n)} - \sqrt{Q(n)})^2 dx)^{3/2}$ =) $d_{Hell}(P,Q) = \frac{1}{2} \int (\sqrt{P(n)} - \sqrt{Q(n)})^2 dx$
=) d'Hell(P,Q) = \frac{1}{2} S(JP(M) - JQ(M))^2 dx
$= \frac{1}{2} \int [P(n) - 2 \sqrt{P(n)} \sqrt{2(n)} + 2(n)] dx$
$=\frac{1}{2}\int P(n) \cdot dn - \int \sqrt{P(n)} \sqrt{q(n)} \cdot dn$
$+\frac{1}{2}\int Q(x)\cdot dx$
$= \frac{1}{2} - \int \int P(n) \cdot q(n) \cdot dn + \frac{1}{2}$
$= 1 - \int \int P(x) P(x) \cdot dx - (i)$
$D_{KL}(PIIQ) = -\int log \frac{q(x)}{P(x)}, P(x), dx$
P(N)
$7, 2 \int (1-\sqrt{\frac{96n}{p(n)}}) \cdot p(n) \cdot dx \left[6 \text{ Given, } 2(1-\sqrt{n}) \leq -\log n\right]$
$\frac{1}{2} \int \frac{\int P(x) - \int P(x)}{\int P(x)} \cdot P(x) \cdot dx$
> 2 [[P(n) - JQ(n)] JP(n), dn
7,2 SP(x).dx-2 SJP(x).q(x).dx
> 2 - 2 S JP(n). 9(n) · dn
> 2(1-SJP(n). q(n)) dn)
2,2 d'He11 (P.9) [Forom(i)]
50, dHeII (P,2) < \frac{1}{2} DKL (P119)