

Third Method of Checking

$$\text{If } d = \frac{1}{2} \log_e (1-x) \quad \text{--- (1)}$$

$$d \cdot d = \frac{1}{2(1-x)} \frac{d}{dr} (1-x)$$

wit $\frac{dx}{dr} = -\frac{x}{r}$,

$$\Rightarrow d \cdot d = \frac{x}{2r(1-x)} \quad \text{--- (2) } \checkmark \checkmark \checkmark$$

So $e^{2d} = \frac{1}{1-x}$ --- (3)

implies $d \cdot d = \frac{x}{2r(1-x)}$

by differentiation.

$$\text{So } R''_{101} = - (d \cdot d)^2 - d_1 (d \cdot d) \quad \text{--- (4a)}$$

$$R''_{101} = -\frac{x}{r^2(1-x)^2} \quad \checkmark \checkmark \checkmark \quad \text{--- (4)}$$

Eq (3) also implies:

$$R_{22} = 0 \quad \text{--- (5)}$$

Q.E.D.

Notes In (4a), $d = -\beta$, $d \cdot d = -d \cdot \beta = 0$.