37. given $f(y; \theta) = \dfrac{3y^2}{\theta^3}$, with $\theta \in (0,\infty)$ and $y \in [0, \theta]$.

let, we have a dataset of n points $y_1, y_2, y_3 \cdots y_n$.

- The likelihood function for this is $L(\theta)$,

$$L(\theta) = \prod_{i=1}^{n} \frac{3y_i^2}{\theta^3} = \left(\frac{3^n}{\theta^{3n}}\right) \prod_{i=1}^{n} y_i^2$$

now to find maximum likelihood estimate for θ
we need to find out θ for which $L(\theta)$ maximises

Also it is given $y \in [0, \theta]$

So, we need small θ such that above condition
is satisfied, which is only possible for

$$\left[\theta = \max\{y_i\} \quad i = 1, 2, 3 \cdots n \right]$$