The Exponential distribution has probability density function

$$f(x|\beta) = \beta \exp(-\beta x)$$

and has expected value $\mathbb{E}(X) = 1/\beta$.

1. Find the maximum likelihood estimator for β, call it $\hat{\beta}$.
2. Use `R` to generate $N = 1101$ random variables from the exponential distribution. Pick a value for the argument `rate` $\equiv \beta$.

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?dexp
```

3. Provide an estimate for $\mathbb{E}(X)$.