

1. The below is an attempt to write a function in R to calculate a `mode` of a dataset `x`. Please fill in the blanks.

Solution:

```
Mode = function(x){  
  
  u = sort(x) # arrange the elements of x ascending order  
  
  ux = unique(u) # returns a vector, data frame or array like x but with duplicate elements or rows  
  
  y =table(u) # provides table of the counts for u.  
  
  z = unname(y) # Remove the "names" attribute of y.  
  
  rc = ux[ z == max(z)]  
  
}
```

2. If $n = \text{length}(x)$, then can you comment on the algorithm's efficiency ? Is there a better way to write the function ?