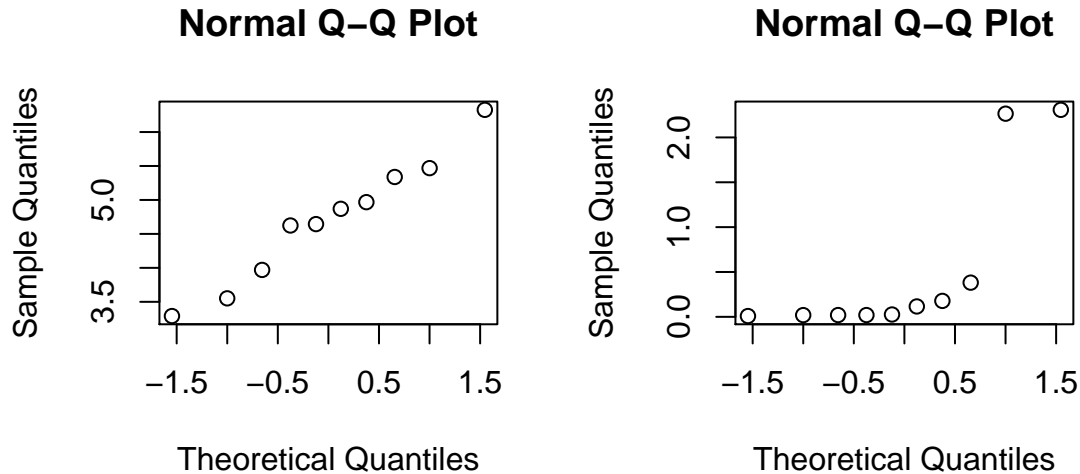




### Known $\sigma$ ( $Z$ ) confidence interval & $n$

A population of watermelons in a farmer's field has unknown population mean weight  $\mu$ , but the population standard deviation weight is known to be about  $\sigma = 1$  pound. A sample of 10 watermelons is taken. Two possible normal QQ plots of the sample weights are shown below.



1. For which sample (the left one, the right one, or both) can we reasonably calculate a known- $\sigma$  confidence interval for  $\mu$ ?
2. Here is the sample for which we can reasonably calculate a known- $\sigma$  confidence interval for  $\mu$ : 4.9, 4.0, 5.5, 6.3, 4.6, 5.0, 3.3, 5.3, 4.6, 3.6  
Find a 90% confidence interval for  $\mu$  and interpret it.
3. The error margin of your interval should have been around 0.5. Suppose the farmer needs a smaller error margin. What sample size is required to get an error margin of 0.1?