1. Assume that the time taken to bake a batch of cookies is normally distributed with mean 45 minutes and standard deviation 2 minutes.

i. Generate a random sample of size 25 for the baking time.

```
> #1.
> #i.
> baking_times <- rnorm(25, mean=45, sd=2)
> baking_times
 [1] 43.92566 48.07290 42.92243 43.43280 48.66051 48.23063 46.54116 45.18583
 [9] 43.59133 45.24997 48.11670 40.95950 43.01671 43.42341 47.02206 48.73853
[17] 42.76064 44.84000 44.16219 43.35220 46.15276 45.25954 39.11734 44.26560
[25] 46.36264
```

ii. Test whether the average baking time is less than 46 minutes at a 5% level of significance.

```
> #ii.
> t.test(baking_times, mu=46, alternative="less")

        One Sample t-test

data:  baking_times
t = -2.183, df = 24, p-value = 0.01953
alternative hypothesis: true mean is less than 46
95 percent confidence interval:
     -Inf 45.76957
sample estimates:
mean of x
 44.93452
```