

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.

```
>
> # Display sample
> baking_time
[1] 41.62661 46.67557 45.30675 42.72373 47.50763 45.85293 44.40986 46.79025 46.75627 46.64316 46.37728 46.10784 44.87618 44.38807 44.23906
[16] 43.61059 44.58417 42.46921 49.33791 47.41592 42.75378 44.19423 44.06669 46.55993 44.83326
```

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

```
> # Perform one-sample t-test
> t.test(baking_time, mu = 46, alternative = "less", conf.level = 0.95)

      One Sample t-test

data:  baking_time
t = -2.1649, df = 24, p-value = 0.02028
alternative hypothesis: true mean is less than 46
95 percent confidence interval:
 -Inf 45.83311
sample estimates:
mean of x
 45.20427

~ |
```