

| Command | Explanation |
|---|--|
| <code>t.test()</code> | uh, it performs a t -test |
| <code>qchisq(p, n - 1)</code> | gives x such that $P(\chi_{n-1}^2 \leq x) = p$ for $\chi_{n-1}^2 \sim \chi^2(n-1)$ |
| <code>qchisq(p, n - 1, lower.tail=FALSE)</code> | gives x such that $P(\chi_{n-1}^2 \geq x) = p$ for $\chi_{n-1}^2 \sim \chi^2(n-1)$ |
| <code>qf(p, v1, v2)</code> | gives x such that $P(F_{v1,v2} \leq x) = p$ for $F_{v1,v2} \sim F(v1, v2)$ |
| <code>qf(p, v1, v2, lower.tail=FALSE)</code> | gives x such that $P(F_{v1,v2} \geq x) = p$ for $F_{v1,v2} \sim F(v1, v2)$ |
| <code>cor(x, y)</code> | finds the sample correlation r_{xy} between x and y |
| <code>cor.test()</code> | tests whether r_{xy} is statistically significant |
| <code>lm(y ~ x)</code> | regresses dependent variable y on independent variable x |

Examples

```
t.test(x, mu = 5, conf.level = 0.90)
```

Performs a t -test using data in x for $H_0 : \mu = 5$ against $H_1 : \mu \neq 5$ at 10% significance.

```
t.test(x, alternative = c("greater"), mu = 5, conf.level = 0.95)
```

Performs a t -test using data in x for $H_0 : \mu \leq 5$ against $H_1 : \mu > 5$ at 5% significance.

```
t.test(x, y, conf.level = 0.95)
```

Performs a t -test using data in x and y for $H_0 : \mu_x = \mu_y$ against $H_1 : \mu_x \neq \mu_y$ at 5% significance.

```
qchisq(0.05, 9, lower.tail = FALSE)
```

Finds the number $\chi_{9,0.05}^2$ such that 5% of the mass of the $\chi^2(9)$ distribution falls above it.

```
cor.test(x, y, method = c("pearson"))
```

Tests whether the correlation coefficient r_{xy} is statistically significant or not.

```
regname <- lm(weight ~ height)
```

Regresses variable *weight* on *height* and saves the results as **regname**.

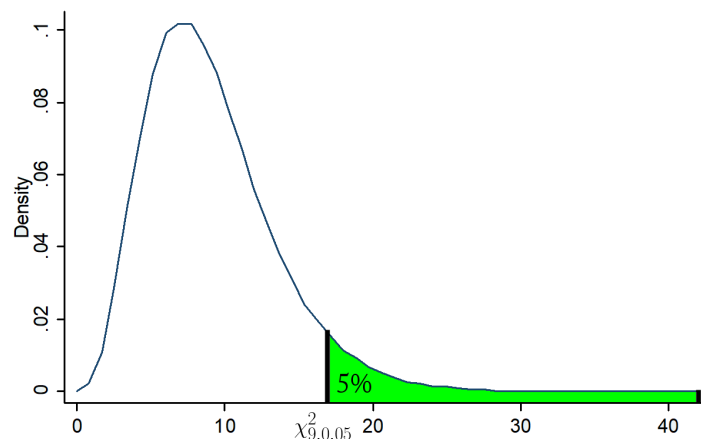


FIGURE 1: $\chi_{9,0.05}^2$ is the number such that 5% of the mass of the $\chi^2(9)$ distribution falls above it