회귀분석 및 실습 Homework 2

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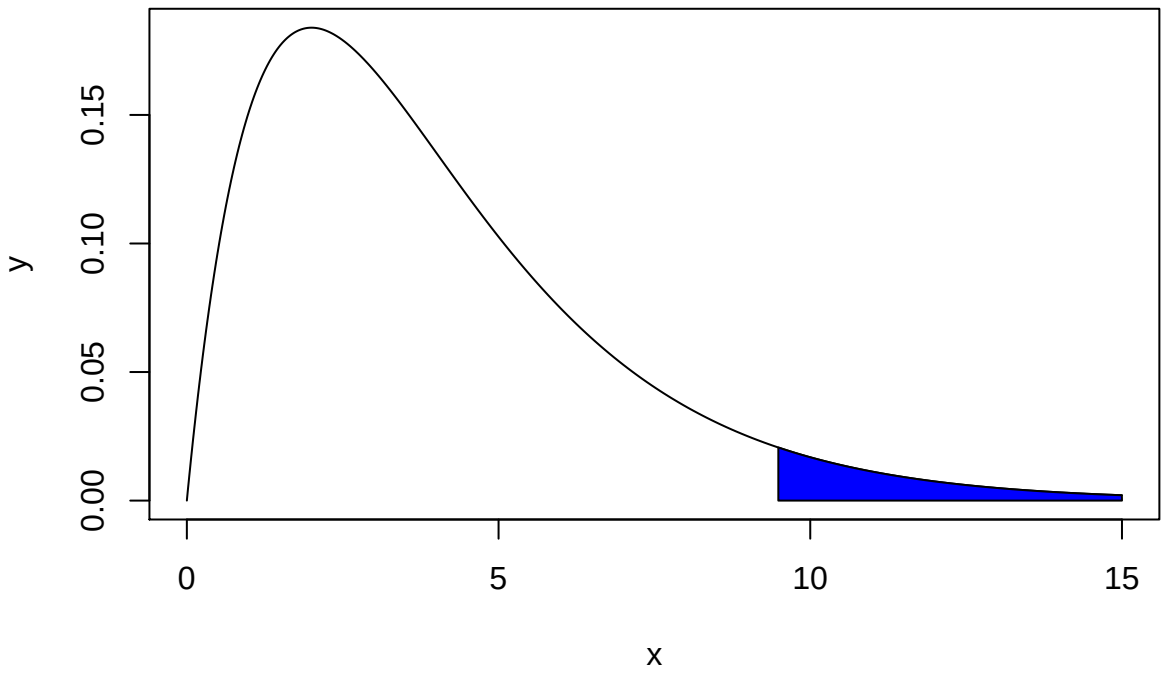
[Problem 1]

```
x = seq(0, 15, by=0.01)
y = dchisq(x, df=4)
plot(x, y, type = 'l')

z_0.95 = qchisq(0.95, df=4)
z = seq(z_0.95, 15, by=0.01)
f.z = dchisq(z, df=4)

z = c(z_0.95, z, 15)
f.z = c(0, f.z, 0)
polygon(z, f.z, col = 'blue')
```

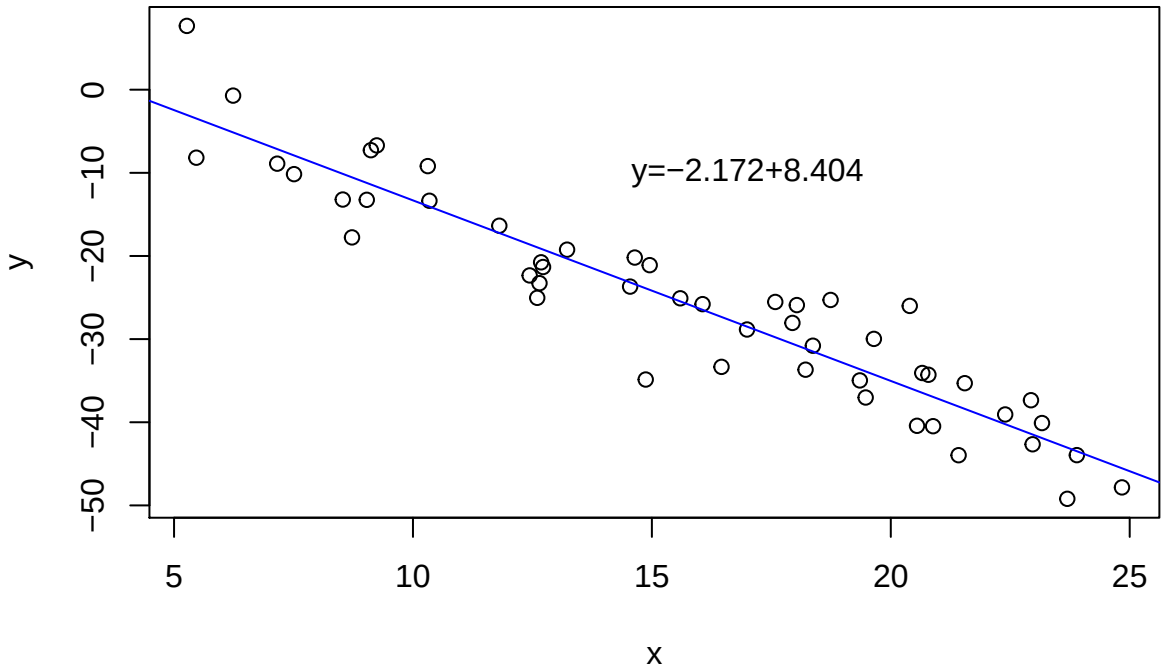


[Problem 2]

(a)

```
set.seed(0)
x = runif(50, min=5, max=25)
e = rnorm(50, mean=0, sd=5)
y = 6 - 2*x + e
plot(x, y)

beta1 = sum((x - mean(x)) * y) / sum((x - mean(x))^2)
beta0 = mean(y - beta1 * mean(x))
abline(a = beta0, b = beta1, col='blue')
text(17, -10, labels=gettextf("y=%.3f+%.3f", beta1, beta0))
```



(b)

$\hat{\beta}_0^{LSE} = 8.403642$
$\hat{\beta}_1^{LSE} = -2.171631$