

Regressão

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```
library(caret)

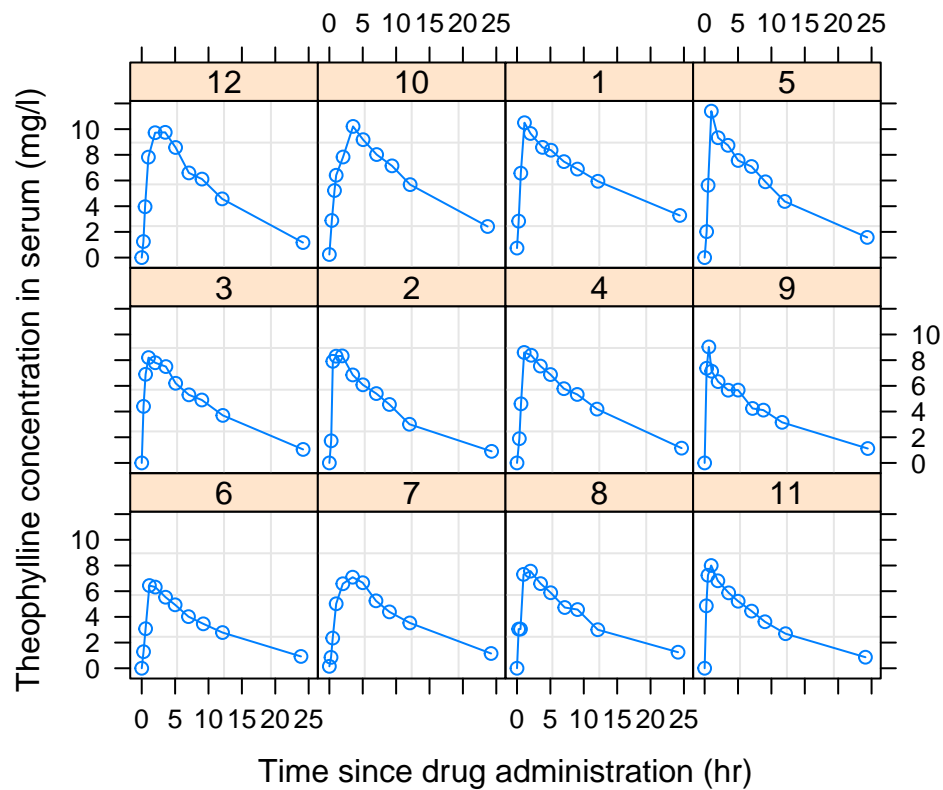
## Loading required package: lattice
## Loading required package: ggplot2
library(rpart)
library(rpart.plot)
library(randomForest)

## randomForest 4.6-14
## Type rfNews() to see new features/changes/bug fixes.
##
## Attaching package: 'randomForest'
## The following object is masked from 'package:ggplot2':
##
##     margin
library(kernlab)

##
## Attaching package: 'kernlab'
## The following object is masked from 'package:ggplot2':
##
##     alpha
library(Metrics)

##
## Attaching package: 'Metrics'
## The following objects are masked from 'package:caret':
##
##     precision, recall
library(bst)

data(Theoph)
data = Theoph
plot(data)
```



Separação dos dados

```
set.seed(1000)
div = createDataPartition(data$conc, p=0.75, list=FALSE)
treinoData = data[div,]
testeData = data[-div,]
```

utilizando o algoritmo “svmLinear”.

```
model_svm = train(conc ~ ., data = data, method = "svmLinear")
```

Medidas de qualidade e grafico

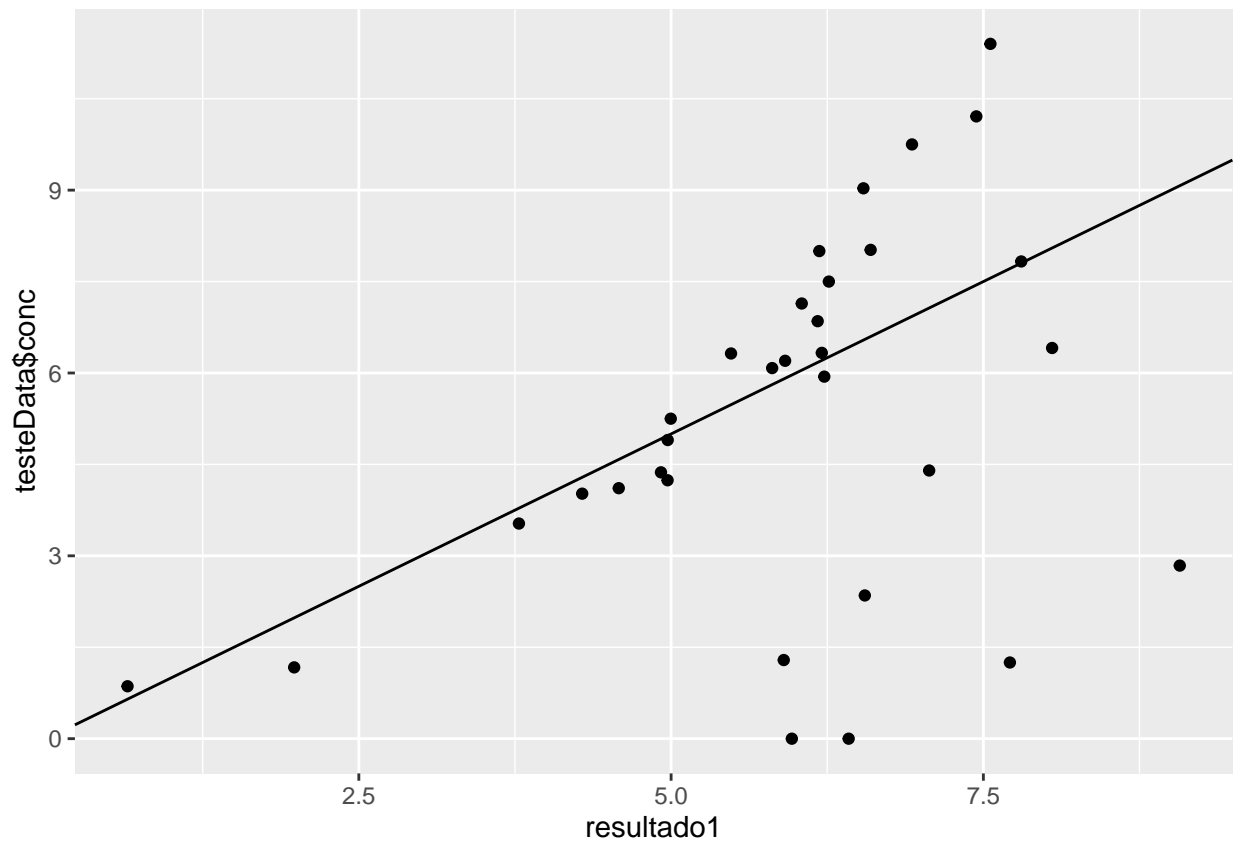
```
resultado1 = predict(model_svm, testeData)
qualidade1 = rmse(testeData$conc, resultado1)
qualidade2 = rrse(testeData$conc, resultado1)
qualidade1
```

```
## [1] 2.818323
```

```
qualidade2
```

```
## [1] 0.9508646
```

```
qplot(resultado1, testeData$conc) + geom_abline(intercept = 0, slope = 1)
```



Treinando meu segundo modelo, utilizando o algoritmo “BstLm”.

```
model_bst = train(conc ~ ., data = data, method = "BstLm")
```

Metrica e grafico

```
resultado2 = predict(model_bst, testeData)
qualidadeM1 = rmse(testeData$conc, resultado2)
qualidadeM2 = rrse(testeData$conc, resultado2)
qualidadeM1
```

```
## [1] 2.67985
```

```
qualidadeM2
```

```
## [1] 0.9041456
```

```
qplot(resultado2, testeData$conc) + geom_abline(intercept = 0, slope = 1)
```

