Test_2.R

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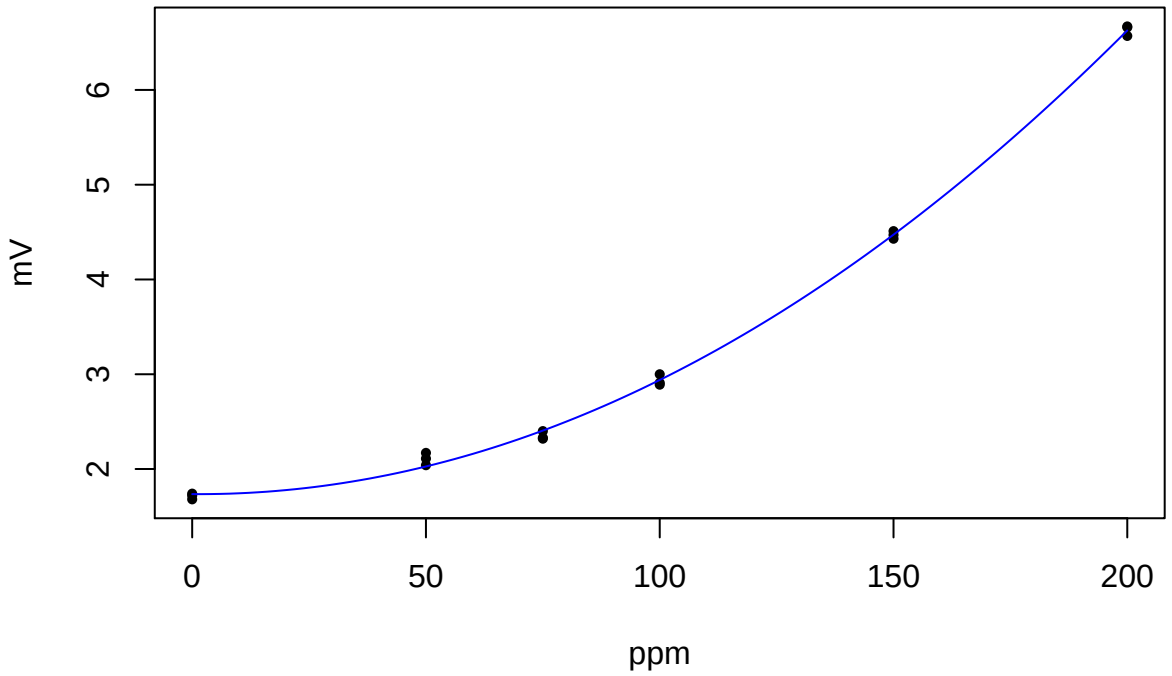
```
# 3
x = c(0,0,0,50,50,50,75,75,75,100,100,100,150,150,150,200,200,200)
y = c(1.72,1.68,1.74,2.04,2.11,2.17,2.40,2.32,2.33,2.91,3.00,2.89,4.47,4.51,4.43,6.67,6.66,6.57)
z = x*x
lm(y ~ x+z)
```

```
##
## Call:
## lm(formula = y ~ x + z)
##
## Coefficients:
## (Intercept)            x            z
##   1.7350418   -0.0003772    0.0001242
```

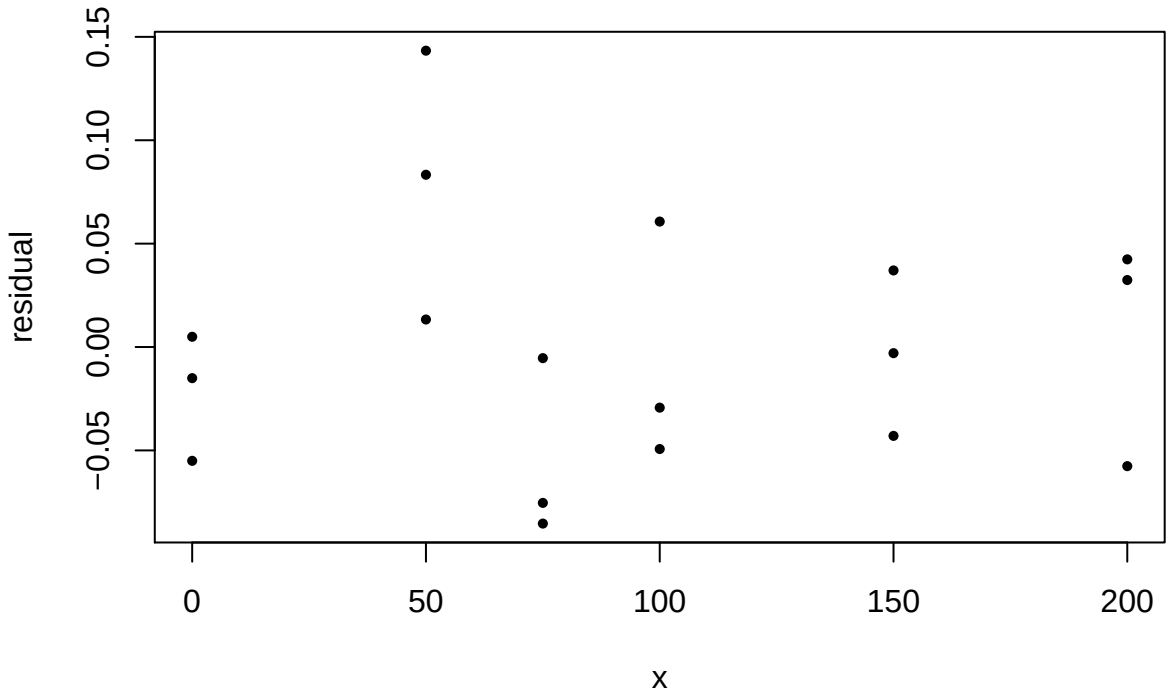
```
plot(x, y, xlab="ppm", ylab="mV", cex=0.7, pch = 16)
curve(0.0001242*x**2-0.0003772*x+1.7350418, add=TRUE, col='blue')
```




```
yi = 0.0001242*x**2-0.0003772*x+1.7350418
y-yi
```

```
##  [1] -0.0150418 -0.0550418  0.0049582  0.0133182  0.0833182  0.1433182
##  [7] -0.0053768 -0.0853768 -0.0753768 -0.0293218  0.0606782 -0.0493218
## [13] -0.0029618  0.0370382 -0.0429618  0.0423982  0.0323982 -0.0576018
```

```
plot(x,y-yi,ylab="residual",cex=0.7, pch = 16)
```




```
# 6
p = 1-pchisq(1.16, 1)
p
```

```
## [1] 0.2814655
```

```
qchisq(0.95, 1)
```

```
## [1] 3.841459
```

```
(300**2+700**2)/500000
```

```
## [1] 1.16
```

```
# 7
((42-36)**2+(42-36)**2+(43-36)**2+(48-36)**2+(20-36)**2+(21-36)**2)/36
```

```
## [1] 20.72222
```

```
((24-18)**2+(19-18)**2+(18-18)**2+(21-18)**2+(13-18)**2+(13-18)**2)/18
```

```
## [1] 5.333333
```

```
qchisq(0.95,1)
```

```
## [1] 3.841459
```

```
qchisq(0.99,1)
```

```
## [1] 6.634897
```