

# Problem Set 0

INF 511

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```
# Q no 1
store_array = vector(mode = "numeric",length = 10)

array_len = length(store_array)

for(i in 1:array_len){
  store_array[i] = i*i
}
store_array
```

```
[1] 1 4 9 16 25 36 49 64 81 100
```

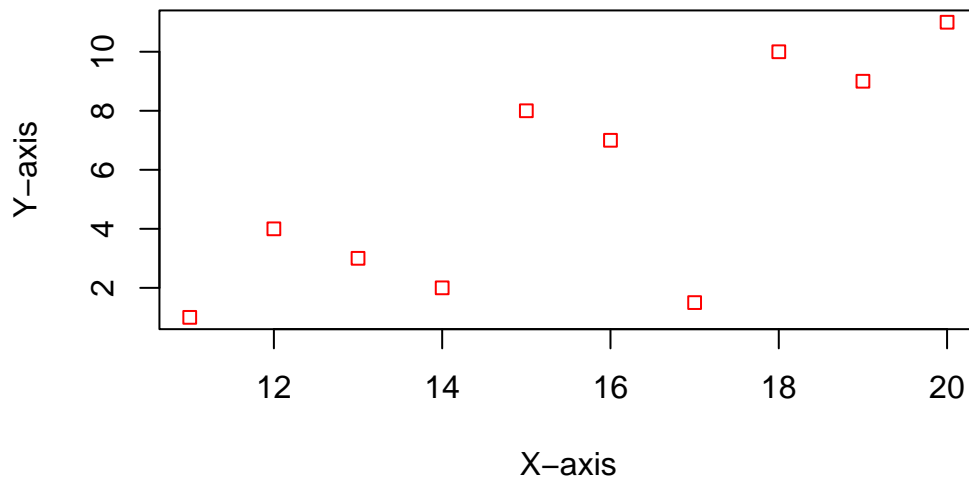
```
# Extract the 5th element of the array:
fifthelement <- store_array[5]
print(fifthelement)
```

```
[1] 25
```

```
#Q no 2
#| fig-width: 5
#| fig-height: 4.5
my_df = data.frame(
  y_var = c(1, 4, 3, 2, 8, 7, 1.5, 10, 9, 11),
  x_var = c(11:20)
)
```

```
# Set #| fig-width: 5 #| fig-height: 4.5
```

```
par(mar = c(5, 4, 4, 2) + 0.1, cex = 1) # set the margin and character expansion
# Use the plot() function
plot(x = my_df$x_var, y = my_df$y_var,
     xlab = "X-axis", ylab = "Y-axis",
     pch = 22, col = "red")
```



```
#Q no 3
my_df = data.frame(
  y_var = c(1, 4, 3, 2, 8, 7, 1.5, 10, 9, 11),
  x_var = c(11:20)
)
my_lm = lm(y_var ~ x_var, data = my_df)
summary(my_lm)
```

Call:

```
lm(formula = y_var ~ x_var, data = my_df)
```

Residuals:

Min	1Q	Median	3Q	Max
-5.5818	-0.3318	0.4409	1.5318	2.8273

Coefficients:

	Estimate	Std. Error	t value	Pr(> t )
(Intercept)	-9.1455	4.4610	-2.050	0.07450 .
x_var	0.9545	0.2830	3.373	0.00974 **

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Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 2.57 on 8 degrees of freedom

Multiple R-squared: 0.5872, Adjusted R-squared: 0.5355

F-statistic: 11.38 on 1 and 8 DF, p-value: 0.009741

```
# The estimate of the slope is 0.9545 and the estimate of the intercept is -9.1455.
```