

HW_1

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R Markdown

This is an R Markdown document. Markdown is a simple formatting syntax for authoring HTML, PDF, and MS Word documents. For more details on using R Markdown see <http://rmarkdown.rstudio.com>.

When you click the **Knit** button a document will be generated that includes both content as well as the output of any embedded R code chunks within the document. You can embed an R code chunk like this:

```
# 1.write a loop that calculates 12 factorial
# assign initial value to a variable
myfactorial <- 1
# iterate 1 through 12 using for loop
for (i in 1:12) {
  # in each iterate it multiplies the index with myfactorial value and assigns the      # product to m
  myfactorial <- myfactorial * i
}
# display the factorial
print(myfactorial)
```

```
## [1] 479001600
```

Including Plots

You can also embed plots, for example:

```
“{r pressure, echo=FA
```

```
# 2. Create a numeric vector that contains the sequence from 20 to 50 by 5.
# using seq function
num_vec <- seq(20,50, by = 5)
# display the output
print(num_vec)
```

```
## [1] 20 25 30 35 40 45 50
```

```
# 3. Create the function "quad" that takes trio of input numbers, a,b,and c and solve # the quadratic eq
quad <- function(a, b, c){
  # calculate the discriminant and assign it to the variable discriminant
  discriminant <- b^2 - 4* a* c
```

```

# now solve the discriminant over the square root and divide by 2* a
solution_a <- (-b + sqrt(discriminant))/(2* a)
solution_b <- (-b - sqrt(discriminant))/(2* a)
cat("solution a is: ", solution_a, "\n")
cat("solution b is: ", solution_b, "\n")
}
quad(1,2,1)

```

```

## solution a is: -1
## solution b is: -1

```

```

quad(1,6,5)

```

```

## solution a is: -1
## solution b is: -5

```

```

# it will become negative discriminant which will produce complex number
quad(1, 1, 1)

```

```

## Warning in sqrt(discriminant): NaNs produced

```

```

## Warning in sqrt(discriminant): NaNs produced

```

```

## solution a is: NaN
## solution b is: NaN

```

Note that the `echo = FALSE` parameter was added to the code chunk to prevent printing of the R code that generated the plot.