Homework 0

Instructions

The instructions for this assignment are to write a Quarto document that allows me to define variables, a, b, and c, then solve the function f(x) = ax^2+bx+c=0 and graph the results.

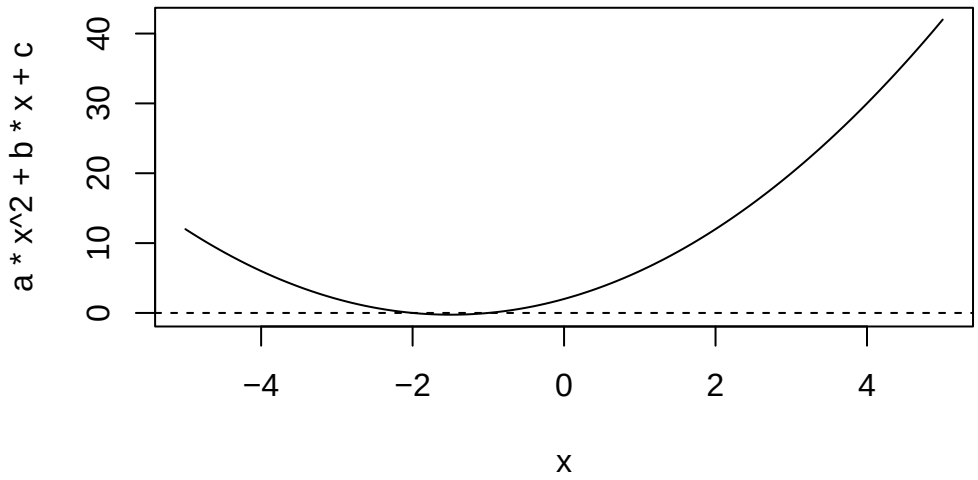
I should show the results for a=1, b=3, and c=2

Solution

```
quadratic_function <- function(a=1, b=3, c=2){
    x <- seq(-5, 5, length = 300)
    solution1 <- (-b+(sqrt((b^2)-(4*a*c))))/(2*a)
    solution2 <- (-b-(sqrt((b^2)-(4*a*c))))/(2*a)
    print(paste ("a is", a))
    print(paste("b is", b))
    print(paste("c is", c))
    print(paste("The solution to the equation f(x) = ax^2+bx+c=0, solving for x, is", solu
    print(paste("The following is the graph of this equation:"))
   paste(plot(x, a*x^2 + b*x + c, type = "l") +abline(h = 0, lty = 2))
}

quadratic_function(a=1,b=3,c=2)
```

```
[1] "a is 1"
[1] "b is 3"
[1] "c is 2"
[1] "The solution to the equation f(x) = ax^2+bx+c=0, solving for x, is -1 and -2"
[1] "The following is the graph of this equation:"
```




```
character(0)
```

Explanation

If people are interested in different values of a, b, and c in the function f(x) = ax^2+bx+c=0, the above code will allow people to change the values of a, b, and c in the function to arrive at the correct solutions for the quadratic equation and correct graphs pertaining to those values of a, b, and c.