



## Digital Receipt

This receipt acknowledges that **Turnitin** received your paper. Below you will find the receipt information regarding your submission.

The first page of your submissions is displayed below.

Submission author: Himakar Gadham  
Assignment title: Assignment 1 - Main document PDF only  
Submission title: 24051868\_23783777\_STAT2401.pdf  
File name: 24051868\_23783777\_STAT2401.pdf  
File size: 318.09K  
Page count: 12  
Word count: 3,269  
Character count: 15,823  
Submission date: 19-Apr-2024 01:44AM (UTC+0800)  
Submission ID: 2354075191

### Assignment 1 Submission

Himakar Gadham & Atikant Jain

April 19, 2024

Assignment 1 submitted by Himakar Gadham - 23783777, Atikant Jain - 24051868

Both of us contributed equally to all the questions. We both sat together in library and worked through all questions and both did final touches.

#### Question 1 Normal distribution. (8 marks)

(a) (1 mark) Find the probability that the user spends more than 15 minutes per month at the site.

```
mean <- 25
std_dev <- 4.0
prob_more_than_15 <- 1 - pnorm(15, mean, std_dev)
cat("Probability that the user spends more than 15 minutes per month:", round(prob_more_than_15, 4))
```

## Probability that the user spends more than 15 minutes per month: 0.9938

(b) (2 marks) Find the probability that the user spends between 20 and 35 minutes per month at the site.

```
prob_between_20_and_35 <- pnorm(35, mean, std_dev) - pnorm(20, mean, std_dev)
cat("Probability that the user spends between 20 and 35 minutes per month:",
    round(prob_between_20_and_35, 4))
```

## Probability that the user spends between 20 and 35 minutes per month: 0.8881

(c) (2 marks) What is the amount of time per month a user spends on Facebook, if only 1% of users spend this time or longer on Facebook?

```
time_for_1_percent <- qnorm(0.99, mean, std_dev)
cat("Time per month a user spends on Facebook if only 1% of users spend this time or longer:",
    round(time_for_1_percent, 4), "minutes")
```

## Time per month a user spends on Facebook if only 1% of users spend this time or longer: 34.3054 minutes

(d) (3 marks) Between what values do the time spent of the middle 90% distribution of Facebook users fall?