ECON 2204
Quiz 1

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February 11, 2026

Instructions

- Time: 2:30-3:45 PM
- Complete this quiz in this Quarto (.qmd) file.
- Render to PDF and submit both:
    1. the `.qmd` file, and
    2. the rendered output (the `.pdf` file).
- Unless told otherwise, write your answers directly under each question.
- Some questions ask you to use chunk options so that only results appear (not code).
- This exam is closed book. No notes, texts, phones, or other study aids are allowed.
- The use of generative AI is strictly prohibited
- You may R's help manual by searching in the Help viewer in RStudio

Questions

1. Getting Started [5 Marks]

    (a) Create an R project entitled econ_2204 and connect it to your GitHub account. Make sure you click Create git repository.
    (b) Within the econ_2204 directory on your local computer, add a new folder called quiz_1.
    (c) Add the Quiz 1 files to the quiz_1 directory.
    (d) Insert the link to your GitHub repository.

    https://github.com/safiamariyam/econ_2204quiz

2. Quarto Basics

(a) In the YAML at the top of this file, replace `YOUR NAME` with your name. [1 Mark]
(b) Put the following words in the appropriate font:
   (i) Bold [0.5 Marks]
   Bold
   (ii) Italics [0.5 Marks]
   Italics
   (iii) Code [0.5 Marks]
   `Code`

3. Write the following equations using LaTeX math syntax so that they render properly. Write them using display math. [2 Marks each]

   (a) The simple linear regression model:

$$Y_i = \beta_0 + \beta_1 X_i + u_i$$

   (b) The sample mean:

$$\bar{X} = \frac{1}{n} \sum_{i=1}^{n} X_i$$

4. Insert an image using Markdown image syntax. [5 Marks]

   - Use the image in the uw-logo-centre-stack-black.png file, but it must render
   - Add a caption that reads: Figure 1: University of Winnipeg Logo.

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Figure 1: Figure 1: University of Winnipeg Logo

5. Insert an R chunk and add an Image Using R. Use the `echo: false` execution option, so that the code does not show in the PDF.

```
'echo: false'
```

```
[1] "echo: false"
```

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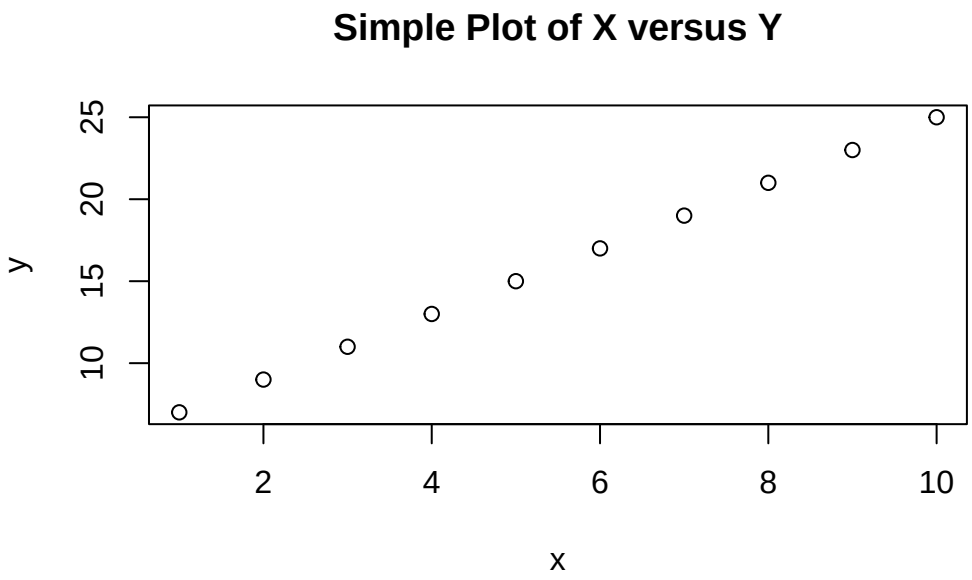
(a) Generate a variable $x=(1,2,3,4,5,6,7,8,9,10)$ \[1 Mark\]
(b) Generate a variable $y= 2x+5$ \[1 Mark\]
(c) Create a simple plot with x on the x-axix and y on the y-axis using the `plot()`
(d) Add a figure caption "Simple Plot of X Versus Y" using the quarto execution command
(e) Add the label `fig-scatterplot` using the `label` execution command
(f) Reference the plot in a sentence below the plot

```
x <- (1:10)
y <- 2*x + 5

plot(x = x,
     y = y,
     main = "Simple Plot of X versus Y")
```



The figure shows a plot of X versus Y

6. (a) Create a data frame using `data.frame()` called `students` with columns `name` and `grade` with the following rows:

name	grade
Ana	82
Ben	75
Cara	91
Dan	68

We want the code to print in the PDF, so set `echo: true`. Compute and print the average grade.

```
students <- data.frame(
name = c("Ana","Ben","Cara","Dan"),
grade = c(82, 75, 91, 68)
)

students
```

```
  name grade
```

```
1  Ana    82
2  Ben    75
3 Cara    91
4  Dan    68
```

```
'echo: true'
```

```
[1] "echo: true"
```

```
avg_grade <- sum(students$grade)/length(students$name)
avg_grade
```

```
[1] 79
```

6. Commit the finished quiz to your GitHub profile [1 Mark]