Homework assignment title.

Paco de Lucía
778899

Baby Yoda
774455

Chick Corea
884422

An alternative for big teams - Chick Corea (884422), Baby Yoda (774455), Paco de Lucía (778899), Suzanne Ciani (365411), Alan Turing (312511) and others.

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Abstract

Summary of main findings and conclusions. Optional section.

Keywords: Optional section. quantitative finance; financial risk; financial modeling in R; Optional section.

1 Introduction.

Look how you can add web links in the following sentence. This template is based on the generic OUP template available here. **Now, look how you can add a different font**. This is useful for `file` or `function names`. The original OUP sample tex document, providing more details on preferred formatting for LaTeX documents, is included with the template in the file `ouparticle_sample.tex`.

Here are some sample references. *Reference in brackets as in a list.* Please see (Hull 2015a; Carhart 1997) for a full discussion of multi-factor models. Bibliography will appear

at the end of the document. *Second, without brackets, separated by a comma.* See Hull (2015a), Hull (2015b), Cochrane (2009) for a formal demonstration of analytical results, and (Carhart 1997; Cochrane 1996) for some empirical results.

2 Methodology.

An equation with a label for cross-referencing:

$$\int_0^{r_2} F(r,\varphi)\mathrm{d}r\,\mathrm{d}\varphi = [\sigma r_2/(2\mu_0)] \int_0^{\infty} \exp(-\lambda|z_j - z_i|)\lambda^{-1} J_1(\lambda r_2) J_0(\lambda r_i\,\lambda \mathrm{d}\lambda) \tag{1}$$

This equation can be referenced as follows: Eq. 1. Now a simpler equation:

$$w = \sum_{i=1}^{20} [1/n^i] \tag{2}$$

This equation can be referenced as Eq. 2.
We can also write equations within the main text as here: $w = \sum_{i=1}^{20} [1/n^i]$.

PMF group 3:00pm. Assume $n = 0.9$, plot the values of w (y-axis) as a function of i (x-axis). Add your name as the plot title. Report your code in a code chunk below. Hint: you need to use the `cumsum()` function.

2.1 A subsection.

A numbered list:

1) First numbered point
2) Second numbered point
    - Subpoint

A bullet list:

- First point
- Second point

3 Results.

3.1 Generate a figure.

```
plot(1:10, main = "Some data", xlab = "Distance (cm)",
     ylab = "Time (hours)")
```

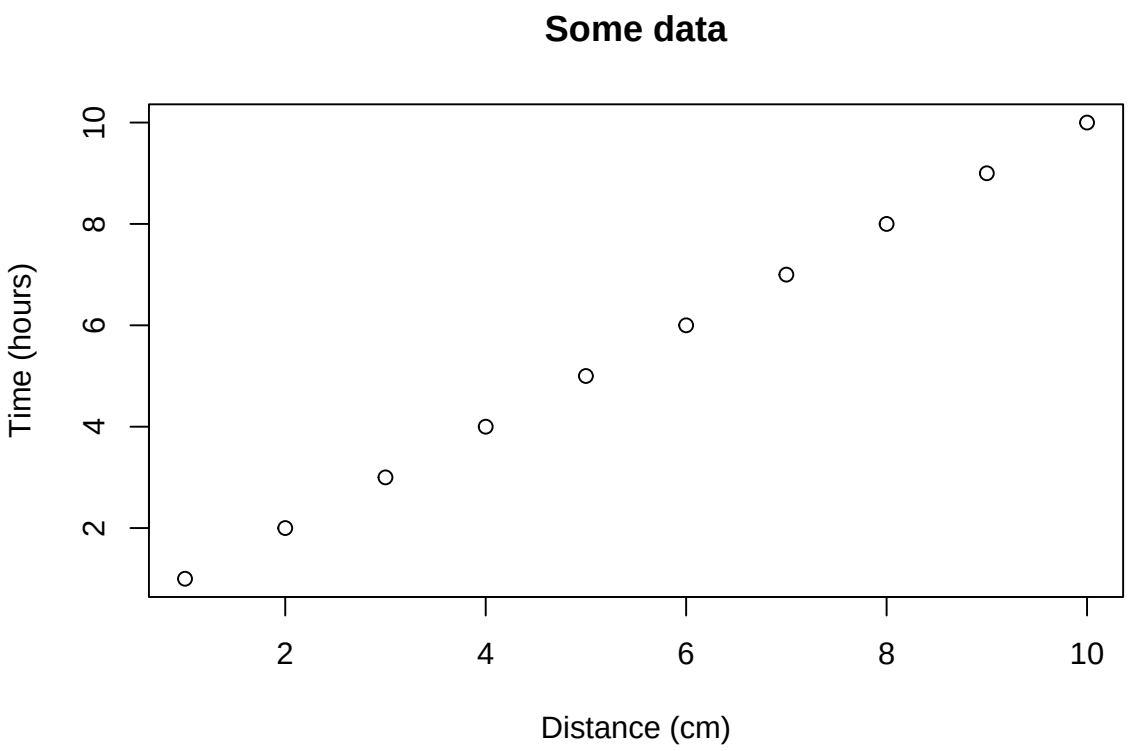

Figure 1: This is the first figure.

You can reference this figure as follows: Fig. 1.

```
plot(1:5, pch = 19, main = "Some data", xlab = "Distance (cm)",
     ylab = "Time (hours)")
```

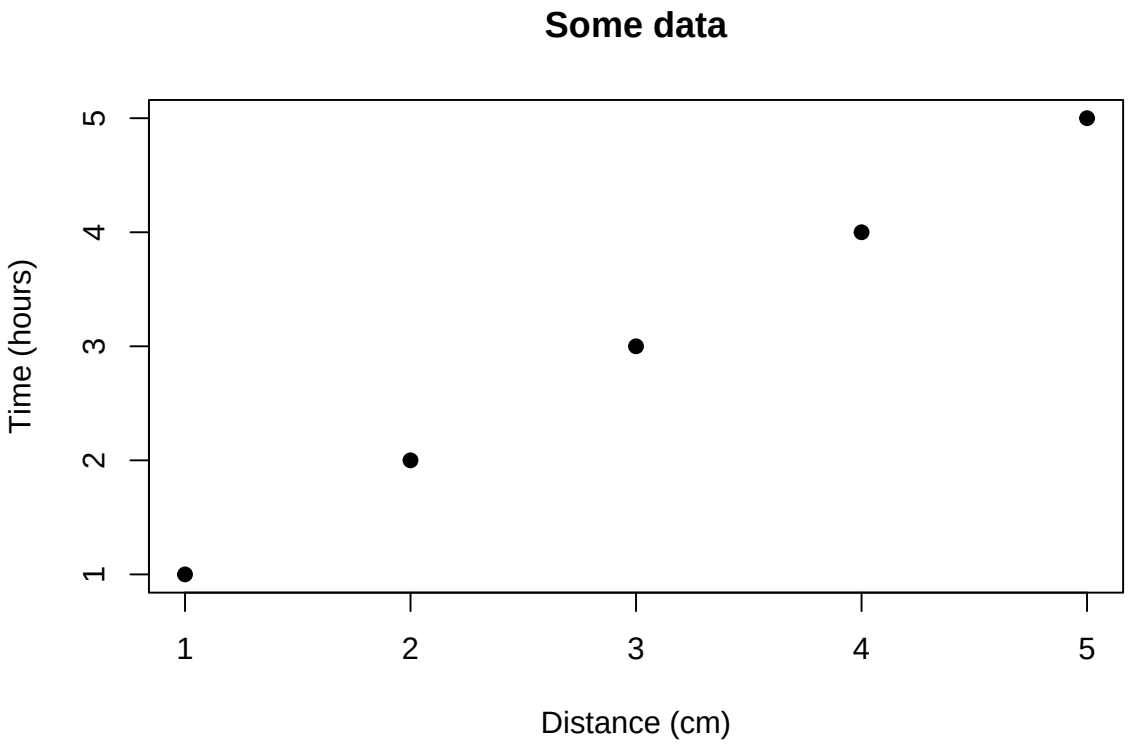

Figure 2: This is the second figure.

Reference to second figure: Fig. 2

3.2 Generate a table using `xtable`.

```
df = data.frame(ID = 1:3, code = letters[1:3])

# Creates tables that follow OUP guidelines using xtable
library(xtable)
print(xtable(df, caption = "This is the table caption",
             label = "tab:tab1"), comment = FALSE)
```

	ID	code
1	1	a
2	2	b
3	3	c

Table 1: This is the table caption

You can reference this table as follows: Table 1.

Table 2: This is the table caption

ID	code
1	a
2	b
3	c

3.3 Generate a table using `kable`.

```
df = data.frame(ID = 1:3, code = letters[1:3])

# kable can alse be used for creating tables
knitr::kable(df, caption = "This is the table caption", format = "latex",
             booktabs = TRUE, label = "tab2")
```

You can reference this table as follows: Table 2.

4 Nombres de los alumnos de PMF (fall 2021).

4.1 Grupo 3:00pm.

Diana Jacquelinne Soto Alcaraz Hola a todos, que tengan buen inicio de semestre

Juan Pablo Almada Burr- Saludos a todos.

Bernardo Amador Padilla - Hola, saludos.

Christian Contreras Hernández - S.O.S.

Melanie Flores García - Hola Grupo

Luis Fernando Rodríguez Parra HOla, saludos a todos

Diego Valdés Contreras - Hola:)

María Fernanda Rendón Muro

Eugenio Murillo Nader - Hola grupo!

Adriana Beatriz Santos Monterroza

Oscar David Cortés Gutiérrez - Hola, excelente semestre!

Pompilio Rainiero Amador Sandoval

José Gonzalo Morones Intriago-Saludos!

Andrea Newell Jasso

María Julia Romero Rico - Holaa!!

Claudia Michelle de los Ríos Arellano

Salvador Adrián Sánchez Macías - hola a todos

Enrique Gallegos Pateiro

César Alejandro Marroquín Garibay- hola todos.

Natalia Azcárraga Kuri - llevo demasiados intentos, y no puedoooooo

Cecilia Reyes Villarreal

Ricardo Díaz Ceballos Corral- Saludos! suerte!

Medardo Chávez Aguilar - Hola a todos!

Sofía Aitana Salcedo Martínez

Karina Albarrán Herrera - Hola a todos, buen inicio de semestre.

César Jacob Linares Murguia

Edgar Fernández Reynaga - Hola a todos.

Marianne Obele Coll

Emilio Noriega González - Saludos a todo el grupo....

Allan Alvarado Lozano - Saludos desde Guadalajara

Lara Hanna Weitgasser - Hola a todos y todas!

4.2 Grupo 6:00pm.

Juan Andrés Castro Moreno

Manuel Alejandro Manríquez Quezada

Juan Carlos Bocanegra Rivera

Alejandro Adolfo Pastor Lara- Saludos a todo el grupo!

Adalberto Vladimir Palomares Ramos

Diana Angélica Sandoval Ramírez - hola! saludos a todos

Luis Daniel Puente Flores - Saludos a todos, buen inicio de semestre

José Ramón Santos Buhl

Raúl Antonio Valdez Lozano

Jesús Oscar López Mendoza

Eduardo Cuesy Saldaña

Héctor Alejandro Faz Zepeda

Adriana Sofía Salcido Berumen - ¡Saludos!

Luis Arturo Payán Quiñones

Daniela Pizano Chávez- Hola profe, saludos!!!

David Armando Placencia Aguilar

Marco Francisco Beltrán Soto - Hola profe, espero que haya tenido un muy buen fin, saludos!

Román Muñoz Loza Saludos desde Aguascalientes!

Oscar Ventura Montaño

Manuel Eduardo Romero Jara

Juan Francisco Marcial Posas - Hola a todos desde Orizaba

Jorge Andrés Ángeles Luévano - Saludos desde Chihuahua, Profesor!

Andrés Amílkar Yáñez Frías
Nicolai Reiners - listo (por fin)...
Félix Muñoz Rodríguez
David Villard Linares
Álvaro Rubio Pina
Eyleen Lizeth López Cueva-Saludos desde Perú

4.3 Task.

Use R code to numerically demonstrate whether the following equation is true:

$$ln(e) + (sin^2x + cos^2x) > \sum_{n=0}^{\infty} 1/2^n \tag{3}$$

Write your R code and results here, below the equation 3 and before the conclusion. Please include your name.

4.3.1 Diana Jacquelinne Soto Alcaraz A00227348.

```
x<-1
equation1<-log(exp(1))+((sin(x)^2)+(cos(x)^2))
equation1
```

```
## [1] 2
```

```
n<- seq(0:50000)
equation2 <- sum(1/2^n)
equation2
```

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

```
equation1>equation2
```

```
## [1] TRUE
```

4.3.2 Juan Pablo Almada Burr A00227349.

```
x<-1
eq<- log(exp(x))+(sin(x)^2)+(cos(x)^2)
eq
```

```
## [1] 2
```

```
n<- seq_len(1000)
eq3 <- sum(1/2^n)
eq3
```

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

```
is.it.true <- eq > eq3
if(is.it.true == TRUE) {print ("Equation is true!")}
```

```
## [1] "Equation is true!"
```

```
if(is.it.true == FALSE) {print("Equation is false!")}
```

PMF group 6:00pm. Plot $y = log(x)$, where $x = 0.1, 0.2, 0.3, ..., 5$. Add your name as the plot title. Report your code in a code chunk below.

5 Conclusion.

You can cross-reference sections and subsections as follows: Section 2 and Section 2.1.

Note: the last section in the document will be used as the section title for the bibliography.

References.

Carhart, Mark M. 1997. "On Persistence in Mutual Fund Performance." *The Journal of Finance* 52 (1): 57–82.

Cochrane, John H. 1996. "A Cross-Sectional Test of an Investment-Based Asset Pricing Model." *Journal of Political Economy* 104 (3): 572–621.

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Hull, John C. 2015a. *Options, Futures, and Other Derivatives*. 9th ed. Prentice Hall.

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