

# Practica 1 TALF

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## 1 Ejercicio 1

1. Find the power set  $R3$  of  $R = (1, 1), (1, 2), (2, 3), (3, 4)$ . Check your answer with the script `powerrelation.m` and write a LATEX document with the solution step by step.

### ***Teoría***

Sabemos que podemos extraer pares de datos de la siguiente manera:

$[R1 \rightarrow (x, b)$

$Rn1 \rightarrow (a, x)]$

Donde  $x$  será el pivote e iremos formando pares con  $a$  y  $b$ .

### ***Solución***

Es necesario conocer  $R2$  para llegar a  $R3$ .

$R1 = [(1, 1), (1, 2), (2, 3), (3, 4)]$

$R2 = [(1, 1), (1, 2), (1, 3), (3, 4)]$

$R3 = [(1, 1), (1, 2), (1, 3), (1, 4)]$

```
des Terminal 31 de oct 19:27
juanfran@juanfran-Aspire-A315-53G: ~
. .config .pki .vscode
.. .gitconfig .profile Descar
.bash_history .gnupg .python_history Docume
.bash_logout .local .ssh Escri
.bashrc .mozilla .sudo_as_admin_successful Imágen
.cache .octave_hist .thunderbird Música
octave:3> cd Documentos/talfuma/software/math/
octave:4> powerrelation({'1','1'}, ['1','2'], ['2','3'], ['3','4'])
ans =
{
  [1,1] = 11
  [1,2] = 12
  [1,3] = 13
  [1,4] = 14
  [1,5] = 23
  [1,6] = 24
  [1,7] = 34
}
octave:5> powerrelation({'1','1'}, ['1','2'], ['2','3'], ['3','4'], 2)
ans =
{
  [1,1] = 11
  [1,2] = 12
  [1,3] = 13
  [1,4] = 24
}
octave:6> powerrelation({'1','1'}, ['1','2'], ['2','3'], ['3','4'], 3)
ans =
{
  [1,1] = 11
  [1,2] = 12
  [1,3] = 13
  [1,4] = 14
}
```

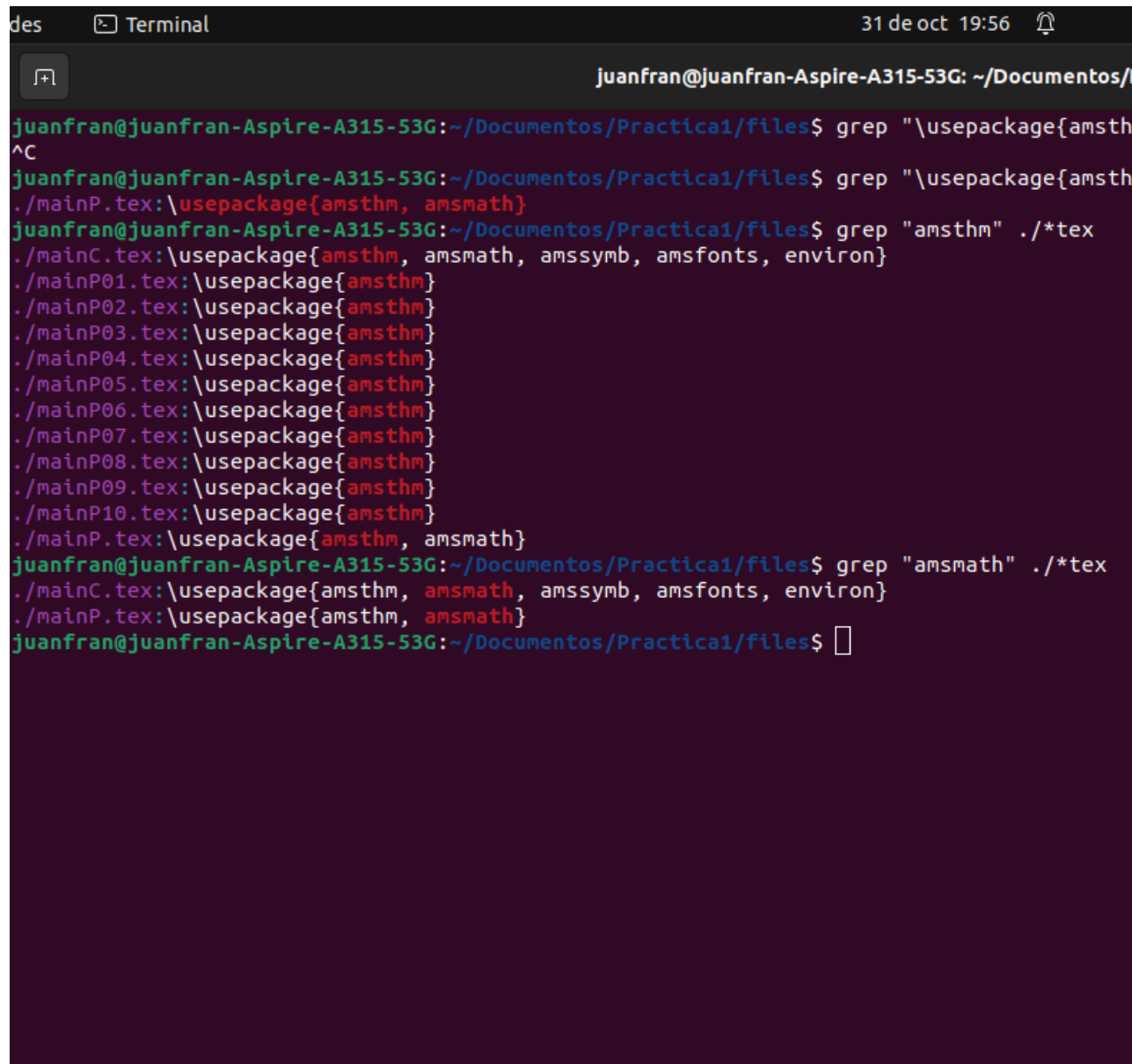
Octave 4. R1, Octave 5. R2, Octave 6. R3

## 2 Ejercicio 2

2. Within the folder “files”, find a TEX file in whose content appears the string. `usepackageamsthm`, `amsmath`. Note: use `grep` and escape the special characters

with Complete the proof and answer the question.

Una vez abierto el terminal de linux y encontremos la ruta del directorio files descargados del campus virtual. Utilizamos el comando grep en la ruta dicha para buscar la palabra que estamos buscando entre todos los archivos de la carpeta. En este caso buscamos la instruccion de latex "usepackage(amsthm...)"



```
des  Terminal  31 de oct 19:56  🔔
juanfran@juanfran-Aspire-A315-53G: ~/Documentos/
juanfran@juanfran-Aspire-A315-53G:~/Documentos/Practica1/files$ grep "\usepackage{amsthm"
^C
juanfran@juanfran-Aspire-A315-53G:~/Documentos/Practica1/files$ grep "\usepackage{amsthm"
./mainP.tex:\usepackage{amsthm, amsmath}
juanfran@juanfran-Aspire-A315-53G:~/Documentos/Practica1/files$ grep "amsthm" ./*tex
./mainC.tex:\usepackage{amsthm, amsmath, amssymb, amsfonts, environ}
./mainP01.tex:\usepackage{amsthm}
./mainP02.tex:\usepackage{amsthm}
./mainP03.tex:\usepackage{amsthm}
./mainP04.tex:\usepackage{amsthm}
./mainP05.tex:\usepackage{amsthm}
./mainP06.tex:\usepackage{amsthm}
./mainP07.tex:\usepackage{amsthm}
./mainP08.tex:\usepackage{amsthm}
./mainP09.tex:\usepackage{amsthm}
./mainP10.tex:\usepackage{amsthm}
./mainP.tex:\usepackage{amsthm, amsmath}
juanfran@juanfran-Aspire-A315-53G:~/Documentos/Practica1/files$ grep "amsmath" ./*tex
./mainC.tex:\usepackage{amsthm, amsmath, amssymb, amsfonts, environ}
./mainP.tex:\usepackage{amsthm, amsmath}
juanfran@juanfran-Aspire-A315-53G:~/Documentos/Practica1/files$
```

Instrucción utilizada: "grep (barra) usepackage amsthm, amsmath ./\*tex"

Solución: **esta en el fichero mainP.tex**