

M Maximality example

```
## -- Attaching packages ----- tidyverse 1.3.0 --
## v ggplot2 3.3.2      v purrr  0.3.4
## v tibble  3.0.4      v dplyr  1.0.2
## v tidyr   1.1.2      v stringr 1.4.0
## v readr   1.4.0      v forcats 0.5.0

## Warning: package 'ggplot2' was built under R version 4.0.3
## Warning: package 'tibble' was built under R version 4.0.3

## -- Conflicts ----- tidyverse_conflicts() --
## x dplyr::filter() masks stats::filter()
## x dplyr::lag()     masks stats::lag()

## If you want correct answers, use rational arithmetic.
## See the Warnings sections added to help pages for
##     functions that do computational geometry.

## [[1]]
##      [,1] [,2] [,3]
## 1      0  0.2  0.4
## 2      1  0.0  0.6
##
## [[2]]
## [1] 0.2

## [[1]]
##      [,1]      [,2]      [,3]
## 1      0 0.3333333 0.3333333
## 2      1 0.0000000 0.5000000
##
## [[2]]
## [1] 0.1666667

## [[1]]
##      [,1]      [,2]      [,3]
## 1 0.6666667 0.3333333 0.3333333
## 2 0.6666667 0.0000000 1.0000000
##
## [[2]]
## [1] 0.3333333

## [[1]]
##      [,1] [,2] [,3]
## 1 0.75  0.5  0.5
## 2 0.75  0.0  1.0
##
## [[2]]
## [1] 0.25
```

define utility matrix

```
utility <- rbind(c(5, 3, 2),  
                c(1, 6, 3),  
                c(2, 4, 0))  
utility
```

```
##      [,1] [,2] [,3]  
## [1,]    5    3    2  
## [2,]    1    6    3  
## [3,]    2    4    0
```

define the input for the probabilistic information

```
boundaries <- rbind(c(0, 0.5),  
                   c(0.2, 0.4),  
                   c(0.25, 1))  
boundaries
```

```
##      [,1] [,2]  
## [1,] 0.00 0.5  
## [2,] 0.20 0.4  
## [3,] 0.25 1.0
```

```
ordinal_structure <- list(c(1,3))
```

```
ordinal_structure
```

```
## [[1]]  
## [1] 1 3
```

call M-Maximality-function

```
m_maximality(utility,  
             mode = "utility",  
             method = "lp", # use linear programming method  
             filter_admissible = TRUE, # only consider admissible acts  
             ordinal_structure = ordinal_structure,  
             boundaries = boundaries)
```

```
##      [,1] [,2] [,3]  
## 1      5    3    2  
## 2      1    6    3
```