

## Business Mathematics (BK/IBA) – Quantitative Research Methods I (EBE) Tutorial 6 – Answers

### Instruction

In a tutorial session of 2 hours, we will obviously not be able to discuss all questions. Therefore, the following procedure applies:

- we expect students to prepare all exercises in advance;
- we will discuss only a selection of exercises;
- exercises that were not discussed during class are nevertheless part of the course;
- students can indicate their wish list of exercises to be discussed during the session;
- teachers may invite students to answer questions, orally or on the blackboard.

!!! We further understand that your time is limited, and in particular that your time between lecture and tutorial may be limited. In case you have no time to prepare everything, we kindly advise you to give priority to the exercises that are indicated with the !!! sign.

### Multiple constrained optimization

A1  $(0,0,1, \lambda = \dots, \mu = \dots)$  is a minimum and  $(\frac{4}{5}, \frac{2}{5}, -\frac{1}{5}, \lambda = \dots, \mu = \dots)$  is a maximum.

A3 (a)  $(\frac{1}{2}, \frac{3}{4})$  (b) there is no minimum (c)  $\frac{1}{10}$

A4 (a) (4,24) (b)  $\frac{1}{4}$  (c)  $(\frac{q^2}{4p^2}, \frac{m}{q} - \frac{q}{4p})$

A5 maximum at (36,12,9).

### Linear programming

A1  $(\frac{8}{5}, \frac{3}{5})$

A2 No.

### Mathematical modeling & Miscellaneous topics

See BlackBoard for solutions.