



**وزارة التعليم العالي والبحث العلمي**

**جامعة أحمد زبانة -غليزان**

**كلية العلوم الاقتصادية والتجارية وعلوم التسيير**

السنة الثانية ليسانس علوم تجارية

مقياس رياضيات المؤسسة

أستاذ المقياس: رفافة عبد العزيز السنة الجامعية 2021-2022

**الاسم: اللقب: الفوج:**

1. **المسألة: (إشكالية اقتصادية)**

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1. **صياغة النموذج الرياضي:**

* **ترميز المتغيرات:**

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* **النموذج الرياضي:**

**دالة الهدف:**

**................**

**القيود:**

**......................**

**.......................**

**.......................**

1. **حل النموذج باستخدام طريقة السمبلكس:**

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | | Min *Z* | = |  | .. | *x*1 | + | ... | *x*2 | + | ... | *x*3 | |
| subject to |
| |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |  |  | *x*1 | + |  | *x*2 | + |  | *x*3 | ≤ |  | |  |  | *x*1 | + |  | *x*2 | + |  | *x*3 | ≥ |  | |  |  | *x*1 | + |  | *x*2 | + |  | *x*3 | = |  | |
| and *x*1,*x*2,*x*3≥0; |

**1-تحويل البرنامج الى الشكل القياسي:**

الشكل القياسي:

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | | Min *Z* | = |  |  | *x*1 | + |  | *x*2 | + |  | *x*3 | + | 0 | *S*1 | + | 0 | *S*2 | + | *M* | *A*1 | + | *M* | *A*2 | |
| subject to |
| |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |  |  | *x*1 | + |  | *x*2 | + |  | *x*3 | + |  | *S*1 |  |  |  |  |  |  |  |  |  | = |  | |  |  | *x*1 | + |  | *x*2 | + |  | *x*3 |  |  |  | - |  | *S*2 | + |  | *A*1 |  |  |  | = |  | |  |  | *x*1 | + |  | *x*2 | + |  | *x*3 |  |  |  |  |  |  |  |  |  | + |  | *A*2 | = |  | |
| and *x*1,*x*2,*x*3,*S*1,*S*2,*A*1,*A*2≥0 |

**2-إيجاد الحل الابتدائي الأساسي الممكن:**

**الكتابة المصفوفاتية للنموذج:**

**3-اعداد الجدول الأول للسمبلكس:**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| الجدول-1 |  | *Cj* |  |  |  |  |  |
| ***Bالمتغيرات الأساسية*** | ***CB***  ***المعاملات*** | ***XB***  ***الحل*** | ***x*1** | ***x*2** | ***S*1** | ***S*2** | **أقل نسبة موجبة *XB/x*2** |
| ***S*1** |  |  |  |  |  |  | 4/8=0.5**→** |
| *S*2 |  |  |  |  |  |  | 6/6=1 |
| ***Z*=0** |  | ***Zj*** |  |  |  |  |  |
|  |  | *Cj*-*Zj* |  |  |  |  |  |

**تحديد المتغير الداخل:** ........

**تحديد المتغير الخارج:** .........

**قيمة المحور** (Pivot) ........

السطر الذي ينتمي اليه المحور:........

*R*1(جديد)=*R*1(قديم)÷8

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| *R*1(قديم) = |  |  |  |  |  |
| *R*1(جديد)=*R*1(قديم)÷8 |  |  |  |  |  |

أما الأسطر الأخرى فيتم حساب قيمها الجديدة كما يلي:

.........

*R*2(جديد)=*R*2(قديم) - 6*R*1(جديد)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| *R*2(قديم) = |  |  |  |  |  |
| *R*1(جديد) = |  |  |  |  |  |
| 6×*R*1(جديد) = |  |  |  |  |  |
| *R*2(جديد)=*R*2(قديم) - 6*R*1(جديد) |  |  |  |  |  |

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| الجدول-2 |  | *Cj* |  |  |  |  |  |
| ***Bالمتغيرات الأساسية*** | ***CB***  ***المعاملات*** | ***XB***  ***الحل*** | ***x*1** | ***x*2** | ***S*1** | ***S*2** | **أقل نسبة موجبة *XB/x*2** |
| *x*1 |  |  |  |  |  |  |  |
| *S*2 |  |  |  |  |  |  |  |
| ***Z*=4** |  | ***Zj*** |  |  |  |  |  |
|  |  | *Cj*-*Zj* |  |  |  |  |  |

كل قيم Cj-Zj .......

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**الحل الأمثل:** ..........

**شرط الأمثلية: ............**