**Integrantes**

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**CASO 4**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Aij** | **Preced** | **t(Sem.)** | **t´(sem)** | **c($)** | **C´($)** |
| A | - | 3 | 1 | 900 | 1700 |
| B | - | 6 | 3 | 2000 | 5000 |
| C | A | 2 | 1 | 500 | 1000 |
| D | B,C | 5 | 3 | 1800 | 2400 |
| E | D | 4 | 3 | 1500 | 1800 |
| F | E | 3 | 1 | 3000 | 3900 |
| G | B,C | 9 | 4 | 8000 | 9800 |
| H | F,G | 3 | 2 | 1000 | 2000 |

Un proyecto que se refiere a la instalación de un sistema de cómputo se desea realizar en 16 semanas con la siguiente información:

* Cuál es el costo adicional para ejecutar el proyecto a 16 semanas.
* Formule el MPL para contraer la red a 16 semanas
* Realice una contracción total de la red

**Solución**

**Método Práctico**

**Cuadro 1**

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Aij** | **Preced** | **t(Sem.)** | **t´(sem)** | **c($)** | **C´($)** | **Mj** | **Kj** | **RC** | **Yj** | **KjYj** |
| A | - | 3 | 1 | 900 | 1700 | 2 | 400 | No |  |  |
| B | - | 6 | 3 | 2000 | 5000 | 3 | 1000 | Si |  |  |
| C | A | 2 | 1 | 500 | 1000 | 1 | 500 | No |  |  |
| D | B,C | 5 | 3 | 1800 | 2400 | 2 | 300 | Si |  |  |
| E | D | 4 | 3 | 1500 | 1800 | 1 | 300 | Si |  |  |
| F | E | 3 | 1 | 3000 | 3900 | 2 | 450 | Si |  |  |
| G | B,C | 9 | 4 | 8000 | 9800 | 5 | 360 | No |  |  |
| H | F,G | 3 | 2 | 1000 | 2000 | 1 | 1000 | Si |  |  |

**Modelo de red**

**C**

|  |  |  |
| --- | --- | --- |
| 3 | 2 | 5 |
| 4 | 1 | 6 |

|  |  |  |
| --- | --- | --- |
| 0 | 6 | 6 |
| 0 | 0 | 6 |

|  |  |  |
| --- | --- | --- |
| 6 | 5 | 11 |
| 6 | 0 | 11 |

|  |  |  |
| --- | --- | --- |
| 6 | 9 | 15 |
| 9 | 3 | 18 |

|  |  |  |
| --- | --- | --- |
| 11 | 4 | 15 |
| 11 | 0 | 15 |

|  |  |  |
| --- | --- | --- |
| 15 | 3 | 18 |
| 15 | 0 | 18 |

|  |  |  |
| --- | --- | --- |
| 18 | 3 | 21 |
| 18 | 0  **H** | 21 |

|  |  |  |
| --- | --- | --- |
| 0 | 3 | 3 |
| 1 | 1 | 4 |

**7**

**9**

**8**

**6**

**5**

**4**

**3**

**2**

**1**

**E**

**F**

**D**

**G**

**B**

**A**

**T=21 semanas**

**Cuadro 2**

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Aij** | **Preced** | **t(Sem.)** | **t´(sem)** | **c($)** | **C´($)** | **Mj** | **Kj** | **RC** | **Yj** | **KjYj** |
| A | - | 3 | 1 | 900 | 1700 | 2 | 400 | No |  |  |
| B | - | 6 | 3 | 2000 | 5000 | 3 | 1000 | Si |  |  |
| C | A | 2 | 1 | 500 | 1000 | 1 | 500 | No |  |  |
| D | B,C | 5 | 3 | 1800 | 2400 | 2 | 300 | Si |  |  |
| E | D | 4 | 3 | 1500 | 1800 | 1 | 300 | Si |  |  |
| F | E | 3 | 1 | 3000 | 3900 | 2 | 450 | Si |  |  |
| G | B,C | 9 | 4 | 8000 | 9800 | 5 | 360 | No |  |  |
| H | F,G | 3 | 2 | 1000 | 2000 | 1 | 1000 | Si | Yn=1 |  |

**Modelo de red**

**C**

|  |  |  |
| --- | --- | --- |
| 3 | 2 | 5 |
| 4 | 1 | 6 |

|  |  |  |
| --- | --- | --- |
| 0 | 6 | 6 |
| 0 | 0 | 6 |

|  |  |  |
| --- | --- | --- |
| 6 | 5 | 11 |
| 6 | 0 | 11 |

|  |  |  |
| --- | --- | --- |
| 6 | 9 | 15 |
| 9 | 3 | 18 |

|  |  |  |
| --- | --- | --- |
| 11 | 4 | 15 |
| 11 | 0 | 15 |

|  |  |  |
| --- | --- | --- |
| 15 | 3 | 18 |
| 15 | 0 | 18 |

|  |  |  |
| --- | --- | --- |
| 18 | 2 | 20 |
| 18 | 0  **H** | 20 |

|  |  |  |
| --- | --- | --- |
| 0 | 3 | 3 |
| 1 | 1 | 4 |

**7**

**9**

**8**

**6**

**5**

**4**

**3**

**2**

**1**

**E**

**F**

**D**

**G**

**B**

**A**

**T=20 semanas**

**Cuadro 3**

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Aij** | **Preced** | **t(Sem.)** | **t´(sem)** | **c($)** | **C´($)** | **Mj** | **Kj** | **RC** | **Yj** | **KjYj** |
| A | - | 3 | 1 | 900 | 1700 | 2 | 400 | No |  |  |
| B | - | 6 | 3 | 2000 | 5000 | 3 | 1000 | Si |  |  |
| C | A | 2 | 1 | 500 | 1000 | 1 | 500 | No |  |  |
| D | B,C | 5 | 3 | 1800 | 2400 | 2 | 300 | Si |  |  |
| E | D | 4 | 3 | 1500 | 1800 | 1 | 300 | Si | Yn=1 |  |
| F | E | 3 | 1 | 3000 | 3900 | 2 | 450 | Si |  |  |
| G | B,C | 9 | 4 | 8000 | 9800 | 5 | 360 | No |  |  |
| H | F,G | 3 | 2 | 1000 | 2000 | 1 | 1000 | Si | Yn=1 |  |

**Modelo de red**

**C**

|  |  |  |
| --- | --- | --- |
| 3 | 2 | 5 |
| 4 | 1 | 6 |

|  |  |  |
| --- | --- | --- |
| 0 | 6 | 6 |
| 0 | 0 | 6 |

|  |  |  |
| --- | --- | --- |
| 6 | 5 | 11 |
| 6 | 0 | 11 |

|  |  |  |
| --- | --- | --- |
| 6 | 9 | 15 |
| 8 | 2 | 17 |

|  |  |  |
| --- | --- | --- |
| 11 | 3 | 14 |
| 11 | 0 | 14 |

|  |  |  |
| --- | --- | --- |
| 14 | 3 | 17 |
| 14 | 0 | 17 |

|  |  |  |
| --- | --- | --- |
| 17 | 2 | 19 |
| 17 | 0  **H** | 19 |

|  |  |  |
| --- | --- | --- |
| 0 | 3 | 3 |
| 1 | 1 | 4 |

**7**

**9**

**8**

**6**

**5**

**4**

**3**

**2**

**1**

**E**

**F**

**D**

**G**

**B**

**A**

**T=19 semanas**

**Cuadro 4**

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Aij** | **Preced** | **t(Sem.)** | **t´(sem)** | **c($)** | **C´($)** | **Mj** | **Kj** | **RC** | **Yj** | **KjYj** |
| A | - | 3 | 1 | 900 | 1700 | 2 | 400 | No |  |  |
| B | - | 6 | 3 | 2000 | 5000 | 3 | 1000 | Si |  |  |
| C | A | 2 | 1 | 500 | 1000 | 1 | 500 | No |  |  |
| D | B,C | 5 | 3 | 1800 | 2400 | 2 | 300 | Si |  |  |
| E | D | 4 | 3 | 1500 | 1800 | 1 | 300 | Si | Yn=1 |  |
| F | E | 3 | 1 | 3000 | 3900 | 2 | 450 | Si | Yn=2 |  |
| G | B,C | 9 | 4 | 8000 | 9800 | 5 | 360 | No |  |  |
| H | F,G | 3 | 2 | 1000 | 2000 | 1 | 1000 | Si | Yn=1 |  |

**Modelo de red**

**C**

|  |  |  |
| --- | --- | --- |
| 3 | 2 | 5 |
| 4 | 1 | 6 |

|  |  |  |
| --- | --- | --- |
| 0 | 6 | 6 |
| 0 | 0 | 6 |

|  |  |  |
| --- | --- | --- |
| 6 | 5 | 11 |
| 6 | 0 | 11 |

|  |  |  |
| --- | --- | --- |
| 6 | 9 | 15 |
| 6 | 0 | 15 |

|  |  |  |
| --- | --- | --- |
| 11 | 3 | 14 |
| 11 | 0 | 14 |

|  |  |  |
| --- | --- | --- |
| 14 | 1 | 15 |
| 14 | 0 | 15 |

|  |  |  |
| --- | --- | --- |
| 15 | 2 | 17 |
| 15 | 0  **H** | 17 |

|  |  |  |
| --- | --- | --- |
| 0 | 3 | 3 |
| 1 | 1 | 4 |

**7**

**9**

**8**

**6**

**5**

**4**

**3**

**2**

**1**

**E**

**F**

**D**

**G**

**B**

**A**

**T=17 semanas**

**Cuadro 5**

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Aij** | **Preced** | **t(Sem.)** | **t´(sem)** | **c($)** | **C´($)** | **Mj** | **Kj** | **RC** | **Yj** | **KjYj** |
| A | - | 3 | 1 | 900 | 1700 | 2 | 400 | No |  |  |
| B | - | 6 | 3 | 2000 | 5000 | 3 | 1000 | Si | Yn=1 |  |
| C | A | 2 | 1 | 500 | 1000 | 1 | 500 | No |  |  |
| D | B,C | 5 | 3 | 1800 | 2400 | 2 | 300 | Si |  |  |
| E | D | 4 | 3 | 1500 | 1800 | 1 | 300 | Si | Yn=1 |  |
| F | E | 3 | 1 | 3000 | 3900 | 2 | 450 | Si | Yn=2 |  |
| G | B,C | 9 | 4 | 8000 | 9800 | 5 | 360 | Si |  |  |
| H | F,G | 3 | 2 | 1000 | 2000 | 1 | 1000 | Si | Yn=1 |  |

**Modelo de red**

**C**

|  |  |  |
| --- | --- | --- |
| 3 | 2 | 5 |
| 3 | 0 | 5 |

|  |  |  |
| --- | --- | --- |
| 0 | 5 | 5 |
| 0 | 0 | 5 |

|  |  |  |
| --- | --- | --- |
| 5 | 5 | 10 |
| 5 | 0 | 10 |

|  |  |  |
| --- | --- | --- |
| 5 | 9 | 14 |
| 5 | 0 | 14 |

|  |  |  |
| --- | --- | --- |
| 10 | 3 | 13 |
| 10 | 0 | 13 |

|  |  |  |
| --- | --- | --- |
| 13 | 1 | 14 |
| 13 | 0 | 14 |

|  |  |  |
| --- | --- | --- |
| 14 | 2 | 16 |
| 14 | 0  **H** | 16 |

|  |  |  |
| --- | --- | --- |
| 0 | 3 | 3 |
| 0 | 0 | 3 |

**7**

**9**

**8**

**6**

**5**

**4**

**3**

**2**

**1**

**E**

**F**

**D**

**G**

**B**

**A**

**T=16 semanas**

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Aij** | **Preced** | **t(Sem.)** | **t´(sem)** | **c($)** | **C´($)** | **Mj** | **Kj** | **RC** | **Yj** | **KjYj** |
| A | - | 3 | 1 | 900 | 1700 | 2 | 400 | Si |  |  |
| B | - | 6 | 3 | 2000 | 5000 | 3 | 1000 | Si | Yn=1 | 1000 |
| C | A | 2 | 1 | 500 | 1000 | 1 | 500 | Si |  |  |
| D | B,C | 5 | 3 | 1800 | 2400 | 2 | 300 | Si |  |  |
| E | D | 4 | 3 | 1500 | 1800 | 1 | 300 | Si | Yn=1 | 300 |
| F | E | 3 | 1 | 3000 | 3900 | 2 | 450 | Si | Yn=2 | 900 |
| G | B,C | 9 | 4 | 8000 | 9800 | 5 | 360 | Si |  |  |
| H | F,G | 3 | 2 | 1000 | 2000 | 1 | 1000 | Si | Yn=1 | 1000 |
|  |  |  |  |  |  |  |  |  |  | 3200 |

**Cuadro 6**

El costo adicional para ejecutar este proyecto en 16 semanas es de $3200.

**Función Objetivo:**

**Descripción de la red**

**Tiempo de Reducción de actividad**

**Contracción de la red**

**C.N.N:**