**تمـــــــــــاريـــــــــــــــــــــــن**

**تمرين 1 :** استخرح المعادلة المنطقية المختزلة.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| a  b | 0 | | 1 | |
| 0 | | 1 | 1 | |
| 1 | | 1 | 1 | |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| *ab*  *c* | *00* | *01* | *11* | *10* |
| *0* | *1* | *1* | *1* | *1* |
| *1* | *0* | *0* | *1* | *1* |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| ab  c | 00 | 01 | 11 | 10 |
| 0 | 1 | 1 | 1 | 1 |
| 1 | 1 | 0 | 0 | 1 |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| *ab*  *c* | *00* | *01* | *11* | *10* |
| *0* | *1* | *0* | *1* | *1* |
| *1* | *0* | *0* | *1* | *1* |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| ab  cd | 00 | 01 | 11 | 10 |
| 00 | 1 | 1 | 1 | 1 |
| 01 | 0 | 1 | 1 | 0 |
| 11 | 0 | 1 | 1 | 0 |
| 10 | 1 | 1 | 1 | 1 |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| *ab*  *cd* | *00* | *01* | *11* | *10* |
| *00* | *1* | *0* | *0* | *1* |
| *01* | *1* | *1* | *1* | *1* |
| *11* | *1* | *1* | *1* | *1* |
| *10* | *1* | *0* | *0* | *1* |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| ab  cd | 00 | 01 | 11 | 10 |
| 00 | 1 | 0 | 0 | 1 |
| 01 | 0 | 1 | 1 | 0 |
| 11 | 0 | 1 | 1 | 0 |
| 10 | 1 | 0 | 0 | 1 |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| ab  cd | 00 | 01 | 11 | 10 |
| 00 | 1 | 1 | 0 | 0 |
| 01 | 0 | 0 | 1 | 1 |
| 11 | 1 | 1 | 0 | 0 |
| 10 | 0 | 0 | 1 | 1 |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| abc  de | 000 | 0001 | 011 | 111 | 101 | 100 | 110 | 010 |
| 00 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 01 | 0 | 1 | 1 | 0 | 0 | 1 | 1 | 0 |
| 11 | 0 | 1 | 1 | 0 | 0 | 1 | 1 | 0 |
| 10 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| abc  de | 000 | 0001 | 011 | 111 | 101 | 100 | 110 | 010 |
| 00 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 01 | 1 | 0 | 1 | 0 | 0 | 1 | 1 | 1 |
| 11 | 1 | 0 | 1 | 0 | 0 | 1 | 1 | 1 |
| 10 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |

**تمرين 2 :** حول المعادلات المنطقية على شكل جداء ثم على شكل جمع.