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| **0** | **0000** | **A'B'C'D'** |
| **1** | **0001** | **A'B'C'D** |
| **2** | **0010** | **A'B'CD'** |
| **3** | **0011** | **A'B'CD** |
| **4** | **0100** | **A'BC'D'** |
| **5** | **0101** | **A'BC'D** |
| **6** | **0110** | **A'BCD'** |
| **7** | **0111** | **A'BCD** |
| **8** | **1000** | **AB'C'D'** |
| **9** | **1001** | **AB'C'D** |
| **10** | **1010** | **AB'CD'** |
| **11** | **1011** | **AB'CD** |
| **12** | **1100** | **ABC'D'** |
| **13** | **1101** | **ABC'D** |
| **14** | **1110** | **ABCD'** |
| **15** | **1111** | **ABCD** |

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|  | **A'B'** | **A'B** | **AB** | **AB'** |
| **C'D'** | **0** | **4** | **12** | **8** |
| **C'D** | **1** | **5** | **13** | **9** |
| **CD** | **3** | **7** | **15** | **11** |
| **CD'** | **2** | **6** | **14** | **10** |

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| **Present State** | **Next State** |
| **0000** | **0001** |
| **0001** | **0011** |
| **0011** | **0010** |
| **0010** | **0110** |
| **0110** | **0111** |
| **0111** | **0101** |
| **0101** | **0100** |
| **0100** | **1100** |
| **1100** | **1101** |
| **1101** | **1111** |
| **1111** | **1110** |
| **1110** | **1010** |
| **1010** | **1011** |
| **1011** | **1001** |
| **1001** | **1000** |
| **1000** | **0000** |

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| |  |  |  |  |  | | --- | --- | --- | --- | --- | |  | **A'B'** | **A'B** | **AB** | **AB'** | | **C'D'** |  |  |  |  | | **C'D** |  |  |  |  | | **CD** |  |  |  |  | | **CD'** |  |  |  |  | | |  |  |  |  |  | | --- | --- | --- | --- | --- | |  | **A'B'** | **A'B** | **AB** | **AB'** | | **C'D'** |  |  |  |  | | **C'D** |  |  |  |  | | **CD** |  |  |  |  | | **CD'** |  |  |  |  | |

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| |  |  |  |  |  | | --- | --- | --- | --- | --- | |  | **A'B'** | **A'B** | **AB** | **AB'** | | **C'D'** |  |  |  |  | | **C'D** |  |  |  |  | | **CD** |  |  |  |  | | **CD'** |  |  |  |  | | |  |  |  |  |  | | --- | --- | --- | --- | --- | |  | **A'B'** | **A'B** | **AB** | **AB'** | | **C'D'** |  |  |  |  | | **C'D** |  |  |  |  | | **CD** |  |  |  |  | | **CD'** |  |  |  |  | |

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| |  |  |  |  |  | | --- | --- | --- | --- | --- | |  | **A'B'** | **A'B** | **AB** | **AB'** | | **C'D'** |  |  |  |  | | **C'D** |  |  |  |  | | **CD** |  |  |  |  | | **CD'** |  |  |  |  | | |  |  |  |  |  | | --- | --- | --- | --- | --- | |  | **A'B'** | **A'B** | **AB** | **AB'** | | **C'D'** |  |  |  |  | | **C'D** |  |  |  |  | | **CD** |  |  |  |  | | **CD'** |  |  |  |  | |

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