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| **R U2 R2 F R F' U2 R' F R F'** | **F R U R' U' F' f R U R' U' f'** | **y' f R U R' U' f' U' F R U R' U' F'** | **y' f R U R' U' f' U F R U R' U' F'** | **r' U2 R U R' U r** |
| **r U2 R' U' R U' r'** | **r U R' U R U2 r'** | **y2 r' U' R U' R' U2 r** | **y R U R' U' R' F R2 U R' U' F'** | **R U R' U R' F R F' R U2 R'** |
| **r' R2 U R' U R U2 R' U M'** | **F R U R' U' F' U F R U R' U' F'** | **r U' r' U' r U r' F' U F** | **R' F R U R' F' R F U' F'** | **y2 l' U' l L' U' L U l' U l** |
| **r U r' R U R' U' r U' r'** | **R U R' U R' F R F' U2 R' F R F'** | **r U R' U R U2 r2 U' R U' R' U2 r** | **M U R U R' U' M' R' F R F'** | **M U R U R' U' M2 U R U' r'** |
| **y R U2 R' U' R U R' U' R U' R'** | **R U2 R2 U' R2 U' R2 U2 R** | **R2 D R' U2 R D' R' U2 R'** | **r U R' U' r' F R F'** | **y F' r U R' U' r' F R** |
| **y R U2 R' U' R U' R'** | **R U R' U R U2 R'** | **r U R' U' M U R U' R'** | **M U R U R' U' R' F R F' M'** | **y' r' D' r U' r' D r2 U' r' U r U r'** |
| **R' U' F U R U' R' F' R** | **S R U R' U' R' F R f'** | **R U R' U' R' F R F'** | **y2 R U R' U' B' R' F R F' B** | **R U2 R2 F R F' R U2 R'** |
| **y2 L' U' L U' L' U L U L F' L' F** | **F R U' R' U' R U R' F'** | **R U R' U R U' R' U' R' F R F'** | **y L F' L' U' L U F U' L'** | **y R' F R U R' U' F' U R** |
| **y2 R U R' U R U2 R' F R U R' U' F'** | **R' U' R U' R' U2 R F R U R' U' F'** | **f' L' U' L U f** | **f R U R' U' f'** | **F R U R' U' F'** |
| **R' U' R' F R F' U R** | **F' L' U' L U L' U' L U F** | **F R U R' U' R U R' U' F'** | **y2 r U' r2 U r2 U r2 U' r** | **r' U r2 U' r2 U' r2 U r'** |
| **f R U R' U' R U R' U' f'** | **R U R' U R d' R U' R' F'** | **r' U' R U' R' U R U' R' U2 r** | **r U R' U R U' R' U R U2 r'** | **R U2 R2 U' R U' R' U2 F R F'** |
| **r U r' U R U' R' U R U' R' r U' r'** | **R U R' U' M'**  **U R U' r'** |  |  |  |

**PLL**

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| **L' U R' D2 R U' R' D2 R2** | **L' R' D2 R U R' D2 R U' R x'** | **y x' R U' R' D R U R' D' R U R' D R U' R' D' x** | **y R' U' F' R U R' U' R' F R2 U' R' U' R U R' U R** | **R2 u R' U R' U' R u' R2 y' R' U R** |
| **R' U' R y R2 u R' U R U' R u' R2** | **R2 u' R U' R U R' u R2 y R U' R'** | **R U R' y' R2 u' R U' R' U R' u R2** | **M2 U M2 U2 M2 U M2** | **y R' U L' U2 R U' R' U2 R L** |
| **R U R' F' R U R' U' R' F R2 U' R'** | **R U R' U R U R' F' R U R' U' R' F R2 U' R' U2 R U' R'** | **R' U L' U2 R U' L R' U L' U2 R U' L** | **L U2 L' U2 L F' L' U' L U L F L2** | **R' U2 R U2 R' F R U R' U' R' F' R2** |
| **R U R' U' R' F R2 U' R' U' R U R' F'** | **M2 U M' U2**  **M U M2** | **M2 U' M' U2**  **M U' M2** | **R' U R' d' R' F' R2 U' R' U R' F R F** | **F R U' R' U' R U R' F' R U R' U' R' F R F'** |
| **M2 U M2 U M' U2 M2 U2 M'** |  |  |  |  |