

 A2 (A2') (R'U)L'U2(RU'R')U2R2 RB'RF2R'BRF2R2 [U']F'LF'R2FL'F'R2F2 [U']RU'L'UR'U2LU'L'U2L	 A6 (A6') (R2U'RF'R'U')(r2U)(FUF') R2DL'BLD'R2U'F'U'F R'UR'U'B'DB'D'B2R'B'BR	 B1 (C1') (R'U'RU')(R'U2R) [U](RU')U'R'U'(RU')R' [U']LU2L'U'LU'L' [U']RB2L'B'L B'R'	 B2 (C4') (I'URU')(rDL'B'LD')(r'U) [U2](R'FU2)(F'FRF')(U2RF') [U']RUR'URU2B'R'BL'B'L R'FRF'LUL'F'LU'L'F L'BU2B'LBL'U2LB' [U']F'LU2L'FLF'U2FL'
 B3 (C2') (B'RBR')U2(R'U2R) LR'U'RUL'U2(R'U)UR [U'] L'BLB'U2B'U2B [U]R'FRF'U2F'U2F	 B4 (C3') (LU2L')U2(R'U)(LU') [U2](RU')U'(R'U)U(R'F)(RF') [U']FU2F'U2F'LFL'	 B5 (C5') (R'U)(LU')(RUR') [U']B'UFU'BUF' [U2](R'F)(RF')r(UR')	 B6 (C6') (RU2R')(FR'F'R)(U'RUR') (RU2)(I'UR'U')(IU'RU')R' [U']F'U'L'ULU'FU'F'U2F [U']BU2B'RB'R'BU'BU'B'
 C1 (B1') (RUR'URU2R') (z')(ULU'LUL2U') [U'] BUB'UBU2B' [U']L'B2RBR'BL	 C2 (B3') (zU')(R2UR'I')y(RU'R'U) (L'U2)(LU2)(LF'L'F) [U2](R'U)URUF(R'U)(RU')F' [U']F'U2FU2FR'F'R	 C3 (B4') (FR'F'R)U2(RU2R') [U]B'U'R(UR')BU(RU')U'R' [U']RB'R'BU2BU2B'	 C4 (B2') (IU'R'U)x2(r'U'rD)(r'Ur)D' [U]R'U'RU'R'U2FRF'LFL' RB'R'BL'U'LBL'ULB' LF'U2FL'F'LU2L'F [U'](FR')U2(RF')(R'F)U2(F'R)
 C5 (B5') (RU')(L'UR'U'R) [U']BU'F'UB'U'F (RU')(r'F)R'(F'r) [U']BU'F'UB'U'F	 C6 (B6') (R'U2)(IU')(RUI')U(R'UR) [U2]R(UR'U)(R'F)(RF')RU2R' [U']FURU'R'UF'UFU2F' [U']FUF'UF'LFL'FU2F'	 D1 (D1') (z'U')(RU'R)U'(LU)(R'U)(R'U) (R'D)(R'D)(R'U)(RD')(RD'R) [U]R(UR'U)(RU')(R'U)(RU')(R'U)U'R' [U']LB'D2BL'U2LB'D2BL'	 D2 (E5') z(U'R2z)(R'U'R)D2(R'UI2) (R'F2)(R'U'R)F2(R'UR2) L'U2L'D'LU2L'DL2 BUL'BLB2U'L'B'L [U2](R'U)(UR')D'(RU')U'(R'D)R2 [U']F'U2F'D'FU2F'DF2
 D3 (E3') (L'U2L)U(fU'FUfUf) (yzU)R2z(RUR')D2(RU'R2) FU2FDF'U2FD'F2 [U']B'U'RB'R'B2URBR' [U'](RU')U'RD(R'U)U(RD')R2	 D4 (F5') (LF'L'F)(UFU'F') [U'](r'U')(R'U)(LU')(RU) [U']R'Ur'UBU'B' [U']FR'F'RURU'R' [U']L'B'R'BLB'RB [U]R'F'L'FRF'LF RU'r'U'F'UF	 D5 (F3') (F'LFL')(U'L'UL) (IULU)(R'U)(L'U') [U]R'Ur'UBU'B' F'r(UR')U'(r'F)R [U']BLFL'B'LF'L'	 D6 (D6') (RUR')(L'U2)(RUR')(U2L) RUL'R'U2RUR'U2R FU2F2LFL'FU2F' [U](L'U)U(RU')(R'U)UL(RU')R' [U']RU2R2FRF'RU2R' RUR2F2rFR'F2R
 E1 (F1') (R'U'RU')(R'U2)(R2UR'U)(RU2R') (R2F')(UFU'F')(U'F2)(RF'R) RB'R'BU'FU'BUF'UB' L2FU'F'UFUF2L'FL' LU2L2BD'BDB2L2U2L'	 E2 (E2') (U'y')(F'RUR')(U2y')(L'UR'U'L) [U](RU'L'UR')U2(B'UBL) BU'F'UB'U2L'ULF [U']R'U'RF(R2D')R(UR'D)(R2U')F' B'UFU'BU2RU'R'F'	 E3 (D3') (RU')(r'U'r'U'r'U')y'(R'U2R) L2DL'U2LD'L'U2L' [U]RB'R'U'B2RBR'UB [U2]R2D(R'U)U(RD')(R'U)(UR')	 E4 (F4') (IU')F(R'U'RF'R'U) (R'U)U(RF')(R'F)U2(F'R)F RB'UR'B'RU'R'B
 E5 (D2') (R'FRUR'FRU)y'(RU2R') (R2D'R)U2(R'DR)(U2R) (I'UIUI'UI'U)y'(RU2R') [U']L'BLUB2L'B'LU'B' [U]F2D'FU2F'DFU2F [U]F'U2FLU'F'U'FUL'	 E6 (E6') [U'](FRUR'U'F') LFUF'U'L' R'U2RFU'R'U'RUF' RUBU'B'R'	 F1 (E1') (RU2R'U'RU')R2U2(RU)(R'UR) (FR')(FR2)(U'R'U')(RUR'F2) BU'FU'B'UF'UB'RB'R' RU2R2F2D'F'DF'R2U2R' [U]LUL'ULU2L'R'U'RU'R'U2R	 F2 (F2') (R'U)r(U2R'x)(R'URU'r) R'UrU2R2FRF'R (R'U)(RU')U'r'(R'F)(RF')R R'URU2R'L'URU'L FRF'LFR2FRF2L'
 F3 (D5') (F'U'FU)(FR'F'R) [U'](R'U'RU)(IU'R'U) [U']BUB'U'r'U'R [U'](FRF')r(UR')U'R' LFL'BLF'L'B' [U'](L'B'RB)(LB')(R'B) [U]R'F'LFRF'L'F	 F4 (E4') F(R'U'RF'R'U)(F'R) FU'(r'F)R2F'rUR2F' F'L2F'R2FL2F'R2F2	 F5 (D4') [U'](RUR'U')(I'URU') (FUF'U')(F'LFL') [U'](F'U'FU)(rUr') [U]R(UR')U'(R'F)(RF') R'F'RB'R'FRB	 F6 (F6') (I'URU')(IU2R'U'y')(R'U'R) (R'FRF')(RU2R')(U'F'U'F) (F'UFU)(RU2R')(FR'F'R) F2R2FU'L'ULF'R2F2 (R'U)R2Dr'U2rD'(R2U'R) B2L2BR'U'RUB'L2B2
 G1 (G1') (FRUR'U'RUR'U'F') (BULU' L'ULU'L'B') R'U2R2UR2UR2U2R' (RU')U'(R2U')(R2U')(R2U')U'R [U']BU2B2U'B2U'B2U2B [U']LUFU'F'UFU'F'L'	 G2 (G4') (R'U2)(RUR'U'RU2)(IU'R'U) R'F2RF'U2RU'r'U'F [U](RU')U'R'U'(RU')R2U(LU')R(UL') [U']B'U2BU2BL'B2U'BUL	 G3 (H2') [U'](R'FRU)(FU'RUR'U'F') RB2U'B2UB2UB2R' [U]F(R2U')R2UR2UF'y(RU')U'R' [U']R'FRF'U'F2LFL'UF	 G4 (G2') (RU2R'U'RU)(R'U2I')(URU') RB2R'BU2R'U'UB' [U'](R'U)UR(UR'U)(R2U') (r'F)R'(F'R) [U']BU2B'U2B'RB2UB'U'R'
 G5 (H3') (RU')(L'U)(R'U)(LUL'UL) R'FR'F'R2U2B'RB'R' (RU')(r'F)(R'F)RU(r'F)R [U]B'RB'R'B2U2L'BLB'	 G6 (G6') (U'y')(R'U'RU')(R'U)y'(R'UIU) L'U'LU'L'UB'UBL (RF')U'(R2F)U'F'UR2U(FR') [U'] F'U'FU'F'UL'ULF [U'] FUF'UFU'RU'R'F' [U2]R'U'RU'R'UF'UFR	 H1 (H1') (LUL'ULU'L'ULU2L') [U](R'FRUR'FRU'R'F'R) BU2B'U2B'U2B'U2B [U](RU')U'R'U'R(UR')U'(RU')R' [U]L'FURU'F'L2FR'F'L' [U]R'FRUR'FRU'R'F'R RUR'URU'R'URU2R'	 H2 (G3') F(URU'R'U)(F'U')(R'F'R) [U]R(B2U')(B2U')(B2U)B2R' [U](RB')(R'B)U2R2F'(RU')r'F2R2 [U'] F'U'LF'L'F2UFR'F'R
 H3 (G5') (RU)(R'U)(RUL'UR'U'I) (FR'F'R)U2F2(LFL'F) [U2]R(UR'U)RU(r'F)R'(F'R) [U]R'FRF'U2R2B'R'BR' [U2]LUL'ULUR'UL'U'R	 H6 (H6') [U'](FRUR'U'RUR'U'RUR'U'F') (IU)(FU'F'UFU'F'UFU'F'I') RBUB'U'BUB'U'BUB'U'R' R'UF2D'FU2F'DF2U'R RUR2F'RF'U'FL'U'LF [U]R(UR'U)y'(R'U)(RU')(R2F)(RF'R) [U'] B'UR2D'RU2R'DR2U'B R2B'D'R2E'F2R2URF2	A2 = A3 = A4 = A5, H2 = H4, H3 = H5.	

