

|                                          |                                      |                                    |                                         |                                          |                                         |                                     |                                        |                                            |                                             |
|------------------------------------------|--------------------------------------|------------------------------------|-----------------------------------------|------------------------------------------|-----------------------------------------|-------------------------------------|----------------------------------------|--------------------------------------------|---------------------------------------------|
| 1<br>                                    | 2<br>                                | 3<br>                              | 4<br>                                   | 5<br>                                    | 6<br>                                   | 7<br>                               | 8<br>                                  | 9<br>                                      | 10<br>                                      |
|                                          |                                      |                                    |                                         | (r' U2)(R U<br>R'U)r                     | (rU2)(R'U'R<br>U'r')                    | (r U)(R'U R<br>U2 r')               | (r'U'R U')<br>(R'U2 r)                 | (r'R2U2)<br>(R'U'R U'R'U'<br>)rR'          | (rR2U2)<br>(RUR'URU)r'<br>R                 |
| 11<br>                                   | 12<br>                               | 13<br>                             | 14<br>                                  | 15<br>                                   | 16<br>                                  | 17<br>                              | 18<br>                                 | 19<br>                                     | 20<br>                                      |
| r'(R2U R'U)<br>(R U2 R' U)(r<br>R')      | (rR2U'R U')<br>(R'U2 R U'<br>R)r'    | (r U' r' U')(r U<br>r') y z U' R U | (R'U')yz(U'R<br>2URU'R'U)F              | (r' U' r) (R' U'<br>R)<br>(U r' U r)     | (r U r')(R U<br>R' U')<br>(r U' r')     |                                     |                                        |                                            |                                             |
| 21<br>                                   | 22<br>                               | 23<br>                             | 24<br>                                  | 25<br>                                   | 26<br>                                  | 27<br>                              | 28<br>                                 | 29<br>                                     | 30<br>                                      |
| (R' U2)(R U<br>R'U')<br>(R U R')(U<br>R) | R U2 (R2 U')<br>(R2 U')R2<br>U2 R    | R2 D(R' U2<br>Rz'R'z)(R'<br>U2 R') | (r U R'U')<br>z(U'R z'R U')             | x'(R U'R'D)<br>(R U R'u')z'              | R'U'R U'R'<br>U2 R                      | R'U2 R U<br>R'U R                   | (r U R' U')(r'<br>R U)(R U' R')        | x'(U'RU')<br>x(R2U)<br>(RUR'U'R)y<br>R2    | x'(R U'R<br>U2)y z<br>(U'R'U'R U<br>R')x U2 |
| 31<br>                                   | 32<br>                               | 33<br>                             | 34<br>                                  | 35<br>                                   | 36<br>                                  | 37<br>                              | 38<br>                                 | 39<br>                                     | 40<br>                                      |
| r<br>U2R'U'R2U'L<br>'UR'U'               | z<br>u'R2URU2R<br>DR'UR              | (R U R' U')z<br>u'Rz'<br>R U'      | (R'U'R U)<br>y(r U R' U')r'<br>R        | (RU2R2) x<br>(U R U')x'(R'<br>U2 R')     | (R'U'RU')<br>(R'U R U R)<br>x'(U' R'U)x | R y (R<br>U'R'U'R U R'<br>)x U'x'   | (R UR'U)<br>(RU'R'U'R')<br>x(U R U')x' | (r U' r' U'<br>r)y(R U<br>R')xz'R'         | (R'U'R)y(RU<br>R'U')yzU'R2<br>U             |
| 41<br>                                   | 42<br>                               | 43<br>                             | 44<br>                                  | 45<br>                                   | 46<br>                                  | 47<br>                              | 48<br>                                 | 49<br>                                     | 50<br>                                      |
| RUR'U(R<br>U2R')U'R<br>y(RUR'U')<br>yzU' | r' R2 y(R U<br>R'U')<br>y' R'U R' r  | R'yz(U'R'UR<br>)yR                 | R U y R<br>U'R'x U'x'                   | R y (R U R'<br>U')y z U'                 | (R' U'<br>zu'Rz')<br>R U'x' U R         | F'z(U'R'U<br>R)*2 x U               | R y (R U R'<br>U')*2 x U'              | x'(R U'<br>R2)z'(R U2)<br>z(U R2)z'<br>R'U | x'(U' R<br>U2)z(U'R2)<br>z'(R' U2)z U<br>R' |
| 51<br>                                   | 52<br>                               | 53<br>                             | 54<br>                                  | 55<br>                                   | 56<br>                                  | 57<br>                              |                                        |                                            |                                             |
| R y (U R U'<br>R')*2 x U'                | (R U R' U)<br>(R d')<br>(R U'R)x U'x | (r' U2)(R U<br>R'U')(R U<br>R'U)r  | (r U2) (R' U'<br>R U R' U')(R<br>U' r') | (RU2)(R2<br>U')R<br>U'R'U2x(U R<br>U')x' | (RU2L'UR'U'<br>rU2)z URU'R              | (R U R' U' r)<br>(R' U)(R U'<br>r') |                                        |                                            |                                             |