

Table 1.2: The Mult. Table for b the \mathcal{O} Algebra \mathcal{O}_4 © copyright 2010, Diane G. Demers

$a \odot b$	1	e_1	e_2	e_3	e_4	e_{12}	e_{31}	e_{14}	e_{23}	e_{42}	e_{34}	e_{123}	e_{124}	e_{134}	e_{234}	\mathcal{U}
1	1	e_1	e_2	e_3	e_4	e_{12}	e_{31}	e_{14}	e_{23}	e_{42}	e_{34}	e_{123}	e_{124}	e_{134}	e_{234}	\mathcal{U}
e_1	e_1	1	e_{12}	$-e_{31}$	e_{14}	$-e_2$	e_3	$-e_4$	e_{123}	$-e_{124}$	e_{134}	e_{23}	$-e_{42}$	e_{34}	\mathcal{U}	$-e_{234}$
e_2	e_2	$-e_{12}$	1	e_{23}	$-e_{42}$	e_1	e_{123}	$-e_{124}$	$-e_3$	e_4	e_{234}	e_{31}	$-e_{14}$	$-\mathcal{U}$	e_{34}	e_{134}
e_3	e_3	e_{31}	$-e_{23}$	1	e_{34}	e_{123}	$-e_1$	$-e_{134}$	e_2	e_{234}	$-e_4$	e_{12}	\mathcal{U}	$-e_{14}$	e_{42}	$-e_{124}$
e_4	e_4	$-e_{14}$	e_{42}	$-e_{34}$	1	e_{124}	$-e_{134}$	e_1	e_{234}	$-e_2$	e_3	$-\mathcal{U}$	e_{12}	$-e_{31}$	e_{23}	e_{123}
e_{12}	e_{12}	e_2	$-e_1$	e_{123}	e_{124}	1	$-e_{23}$	$-e_{42}$	e_{31}	e_{14}	\mathcal{U}	e_3	e_4	e_{234}	$-e_{134}$	e_{34}
e_{31}	e_{31}	$-e_3$	e_{123}	e_1	$-e_{134}$	e_{23}	1	$-e_{34}$	$-e_{12}$	$-\mathcal{U}$	e_{14}	e_2	e_{234}	$-e_4$	$-e_{124}$	$-e_{42}$
e_{14}	e_{14}	e_4	$-e_{124}$	$-e_{134}$	$-e_1$	e_{42}	e_{34}	1	\mathcal{U}	$-e_{12}$	$-e_{31}$	e_{234}	$-e_2$	$-e_3$	$-e_{123}$	e_{23}
e_{23}	e_{23}	e_{123}	e_3	$-e_2$	e_{234}	$-e_{31}$	e_{12}	\mathcal{U}	1	$-e_{34}$	e_{42}	e_1	e_{134}	$-e_{124}$	e_4	e_{14}
e_{42}	e_{42}	$-e_{124}$	$-e_4$	e_{234}	e_2	$-e_{14}$	$-\mathcal{U}$	e_{12}	e_{34}	1	$-e_{23}$	e_{134}	$-e_1$	$-e_{123}$	e_3	$-e_{31}$
e_{34}	e_{34}	e_{134}	e_{234}	e_4	$-e_3$	\mathcal{U}	$-e_{14}$	e_{31}	$-e_{42}$	e_{23}	1	e_{124}	$-e_{123}$	e_1	e_2	e_{12}
e_{123}	e_{123}	e_{23}	e_{31}	e_{12}	\mathcal{U}	e_3	e_2	$-e_{234}$	e_1	$-e_{134}$	$-e_{124}$	1	e_{34}	e_{42}	e_{14}	$-e_4$
e_{124}	e_{124}	$-e_{42}$	$-e_{14}$	$-\mathcal{U}$	e_{12}	e_4	$-e_{234}$	$-e_2$	$-e_{134}$	$-e_1$	e_{123}	$-e_{34}$	1	e_{23}	e_{31}	e_3
e_{134}	e_{134}	e_{34}	\mathcal{U}	$-e_{14}$	$-e_{31}$	$-e_{234}$	$-e_4$	$-e_3$	e_{124}	e_{123}	e_1	$-e_{42}$	$-e_{23}$	1	e_{12}	$-e_2$
e_{234}	e_{234}	$-\mathcal{U}$	e_{34}	e_{42}	e_{23}	e_{134}	e_{124}	e_{123}	e_4	e_3	e_2	$-e_{14}$	$-e_{31}$	$-e_{12}$	1	e_1
\mathcal{U}	\mathcal{U}	e_{234}	$-e_{134}$	e_{124}	$-e_{123}$	e_{34}	$-e_{42}$	e_{23}	e_{14}	$-e_{31}$	e_{12}	e_4	$-e_3$	e_2	$-e_1$	1