775.

TABLES OF COVARIANTS OF THE BINARY SEXTIC.

[Written in 1894: now first published.]

THE binary sextic has in all (including the sextic itself and the invariants) 26 covariants which I have represented by the capital letters A, B, C, ..., Z. The leading coefficients of the covariants A to R (of course for an invariant this means the invariant itself) are given in my paper "Tables for the binary sextic," *Amer. Math. Jour.* vol. IV. (1881), pp. 379—384, [774]; the two invariants Z and W (Salmon's invariants D and E) had been already calculated. But I did not in my values of the leading coefficients, nor did Salmon in his values of the two invariants, insert the literal terms with zero coefficients: as remarked in my paper [143] "Tables of the covariants M to W of the binary quintic," it is very desirable to have in every case the complete series of literal terms, and I have accordingly in the expressions of the covariants A to R obtained for the leading coefficients, and in the expressions obtained from Salmon for the invariants W and Z, inserted in each case the complete series of literal terms.

I give a list of the 26 covariants nearly in the form of that given in the latter paper [143] for the covariants of the quintic, only instead of a separate column of deg-weights I insert these in the body of the symbol; thus

$$C = (3, 3, 4, 3, 3)^2 \ 4 \text{ to } 8 \ (x, y)^4,$$

the 5 coefficients of the quartic function contain respectively 3, 3, 4, 3, 3 terms (some of them it may be with zero coefficients), are of the degree 2, and of the weights 4, 5, 6, 7, 8 respectively.

The list is as follows:

$$A = (1, 1, 1, 1, 1, 1, 1)^1 \ 0 \text{ to } 6 \ (x, y)^6,$$
$$B = (4)^2 \ 6 \ (x, y)^0, \text{ Invt.,}$$
$$C = (3, 3, 4, 3, 3)^2 \ 4 \text{ to } 8 \ (x, y)^4,$$
$$D = (2, 2, 3, 3, 4, 3, 3, 2, 2)^2 \ 2 \text{ to } 10 \ (x, y)^8,$$

$E = (8, 8, 8)^3$ 8 to 10 $(x, y)^2$,

$F = (7, 7, 8, 8, 8, 7, 7)^3$ 6 to 12 $(x, y)^6$,

$G = (5, 7, 7, 8, 8, 8, 7, 7, 5)^3$ 5 to 13 $(x, y)^8$,

$H = (3, 4, 5, 7, 7, 8, 8, 8, 7, 7, 5, 4, 3)^3$ 3 to 15 $(x, y)^{12}$,

$I = (18)^4$ 12 $(x, y)^0$, Invt.,

$J = (16, 16, 18, 16, 16)^4$ 10 to 14 $(x, y)^4$,

$K = (14, 16, 16, 18, 16, 16, 14)^4$ 9 to 15 $(x, y)^6$,

$L = (10, 13, 14, 16, 16, 18, 16, 16, 14, 13, 10)^4$ 7 to 17 $(x, y)^{10}$,

$M = (32, 32, 32)^5$ 14 to 16 $(x, y)^2$,

$N = (30, 32, 32, 32, 30)^5$ 13 to 17 $(x, y)^4$,

$O = (25, 29, 30, 32, 32, 32, 30, 29, 25)^5$ 11 to 19 $(x, y)^8$,

$P = (58)^6$ 18 $(x, y)^0$, Invt.,

$Q = (51, 55, 55, 58, 55, 55, 51)^6$ 15 to 21 $(x, y)^6$,

$R = (51, 55, 55, 58, 55, 55, 51)^6$ 15 to 21 $(x, y)^6$,

$S = (94, 94, 94)^7$ 20 to 22 $(x, y)^2$,

$T = (90, 94, 94, 94, 90)^7$ 19 to 23 $(x, y)^4$,

$U = (147, 151, 147)^8$ 23 to 25 $(x, y)^2$,

$V = (221, 227, 227, 227, 221)^9$ 25 to 29 $(x, y)^4$,

$W = (338)^{10}$ 30 $(x, y)^0$, Invt.,

$X = (332, 338, 332)^{10}$ 29 to 31 $(x, y)^2$,

$Y = (668, 676, 668)^{12}$ 35 to 37 $(x, y)^2$,

$Z = (1636)^{15}$ 45 $(x, y)^0$, Invt.

$$A = (\quad \mathbb{X} x, y)^6$$

x^6	x^5y	x^4y^2	x^3y^3	x^2y^4	xy^5	y^6
$a + 1$	$b + 6$	$c + 15$	$d + 20$	$e + 15$	$f + 6$	$g + 1$

$$B = (\quad \mathbb{X} x, y)^0, \text{ Invt.}$$

$ag + 1$
$bf - 6$
$ce + 15$
$d^2 - 10$
± 16

$$C = (\quad)(x,\ y)^4$$

x^4	x^3y	x^2y^2	xy^3	y^4
$ae+1$	$af+2$	$ag+1$	$bg+2$	$cg+1$
$bd-4$	$be-6$	$bf\ \dots$	$cf-6$	$df-4$
c^2+3	$cd+4$	$ce-9$	$de+4$	e^2+3
		d^2+8		
± 4	± 6	± 9	± 6	± 4

$$D = (\quad)(x,\ y)^8$$

x^8	x^7y	x^6y^2	x^5y^3	x^4y^4	x^3y^5	x^2y^6	xy^7	y^8
$ac+1$	$ad+4$	$ae+6$	$af+4$	$ag+1$	$bg+4$	$cg+6$	$dg+4$	$eg+1$
b^2-1	$bc-4$	$bd+4$	$be+16$	$bf+14$	$cf+16$	$df+4$	$ef-4$	f^2-1
		c^2-10	$cd-20$	$ce+5$	$de-20$	e^2-10		
				d^2-20				
± 1	± 4	± 10	± 20	± 20	± 20	± 10	± 4	± 1

$$E = (\quad)(x,\ y)^2$$

x^2	xy	y^2
$a\ cg\ +1$	$a\ dg\ +1$	$a\ eg\ +1$
$df-3$	$ef-1$	f^2-1
e^2+2	a^0bcg-1	a^0bdg-3
a^0b^2g-1	$bdf-8$	$bef+3$
$bcf+3$	be^2+9	c^2g+2
$bde-1$	c^2f+9	$cdf-1$
c^2e-3	$cde-17$	ce^2-3
cd^2+2	d^3+8	d^3+2
± 3	± 1	± 1
± 5	± 26	± 7

$$F = (\quad)(x,\ y)^6$$

x^6	x^5y	x^4y^2	x^3y^3	x^2y^4	xy^5	y^6
$a^2g\ \dots$	$a\ bg\ \dots$	$a\ cg\ +1$	$a\ dg\ +2$	$a\ eg\ +1$	$a\ fg\ \dots$	$a\ g^2\ \dots$
$a\ bf\ \dots$	$cf+2$	$df+2$	$ef-2$	f^2-1	a^0beg+2	$a^0bfg\ \dots$
$ce+1$	$de-2$	e^2-3	a^0bcg-2	a^0bdg+2	bf^2-2	$ceg+1$
d^2-1	a^0b^2f-2	a^0b^2g-1	$bdf+4$	$bef-2$	$cdg-2$	cf^2-1
a^0b^2e-1	$bce+2$	$bcf-2$	be^2-2	c^2g-3	$cef+2$	d^2g-1
$bcd+2$	bd^2+2	$bde+4$	c^2f-2	$cdf+4$	d^2f+2	$def+2$
c^3-1	c^2d-2	c^2e+2	$cde+6$	ce^2+2	de^2-2	e^3-1
		d^2-3	d^3-4	d^2e-3		
± 1	± 2	± 3	± 2	± 1	± 6	± 3
± 2	± 4	± 6	± 10	± 8		

$$G = (\quad x,\ y)^8$$

x^8	x^7y	x^6y^2	x^5y^3	x^4y^4	x^3y^5	x^2y^6	xy^7	y^8
$a^2f + 1$	$a^2g + 1$	$abg + 7$	$acg + 7$	$ady \ \cdots$	$aey - 7$	$afy - 7$	$ag^2 - 1$	$a^0bg^2 - 1$
$abe - 5$	$bf + 2$	$cf - 14$	$df - 28$	$ef - 35$	$f^2 - 14$	$a^0beg + 14$	$a^0bfg - 2$	$cfg + 5$
$cd + 2$	$ce - 19$	$de - 14$	$e^2 - 14$	$a^0bcy + 35$	$a^0bdy + 28$	$bf^2 \ \cdots$	$ceg + 19$	$deg - 2$
$a^0b^2d + 8$	$d^2 + 8$	$a^0b^2f \ \cdots$	$a^0b^2y + 14$	$bdf \ \cdots$	$bef + 42$	$cdg + 14$	$cf^2 + 6$	$df^2 - 8$
$bc^2 - 6$	$a^0b^2e - 6$	$bce - 21$	$bcf - 42$	$be^2 - 105$	$c^2g + 14$	$cef + 21$	$d^2y - 8$	$e^2f + 6$
	$bcd + 44$	$bd^2 + 112$	$bde + 168$	$c^2f + 105$	$cdf - 168$	$d^2f - 112$	$def - 44$	
	$c^3 - 30$	$c^2d - 70$	$c^2e - 105$	$cde \ \cdots$	$ce^2 + 105$	$de^2 + 70$	$e^3 + 30$	
			$d^2 \ \cdots$	$d^3 \ \cdots$	$d^2e \ \cdots$			
± 11	± 55	± 119	± 189	± 140	± 189	± 119	± 55	± 11

$$H = (\quad x,\ y)^{12}$$

x^{12}	$x^{11}y$	$x^{10}y^2$	x^9y^3	x^8y^4	x^7y^5	x^6y^6	x^5y^7	x^4y^8	x^3y^9	x^2y^{10}	xy^{11}	y^{12}
$a^2d + 1$	$a^2e + 3$	$a^2f + 3$	$a^2g + 1$	$abg + 9$	$acg + 12$	$ady \ \cdots$	$aey - 12$	$afy - 9$	$a^0g^2 - 1$	$a^0bg^2 - 3$	$a^0cg^2 - 3$	$a^0dg^2 - 1$
$abc - 3$	$abd \ \cdots$	$abe + 18$	$abf + 24$	$cf + 15$	$df - 48$	$cf - 84$	$f^2 - 24$	$a^0beg - 15$	$a^0bfg - 24$	$cfg - 18$	$dfg \ \cdots$	$efg + 3$
$b^3 + 2$	$c^2 - 15$	$cd - 60$	$ce - 30$	$de - 150$	$e^2 - 90$	$a^0bcy + 84$	$a^0bdg + 48$	$bf^2 - 66$	$ceg + 30$	$deg + 60$	$e^2g + 15$	$f^3 - 2$
	$a^0b^2c + 12$	$a^0b^2d + 24$	$d^2 - 80$	$a^0b^2f + 66$	$a^0b^2y + 24$	$bdf \ \cdots$	$bef - 192$	$cdg + 150$	$cf^2 - 60$	$df^2 - 24$	$ef^2 - 12$	
		$bc^2 + 15$	$a^0b^2e + 60$	$bce + 105$	$bcf + 192$	$be^2 - 210$	$c^2y + 90$	$cef - 105$	$d^2y + 80$	$e^2f - 15$		
			$bcd \ \cdots$	$bd^2 - 120$	$bde - 240$	$c^2f + 210$	$cdf + 240$	$d^2f + 120$	$def \ \cdots$			
			$c^3 + 25$	$c^2d + 75$	$c^2e + 150$	$cde \ \cdots$	$de^2 - 150$	$de^2 - 75$	$e^3 - 25$			
					$cd^2 \ \cdots$	$d^3 \ \cdots$	$d^2e \ \cdots$	$d^2e \ \cdots$				
± 3	± 15	± 60	± 110	± 270	± 378	± 294	± 378	± 270	± 110	± 60	± 15	± 3

$I = (\ \ x,\ y)^0$, Invt.

$$J = (\ \ x,\ y)^4$$

I		x^4		x^3y		x^2y^2		xy^3		y^4	
a^2g^2	...	a^2eg	...	a^2fg	$+\ 2$	a^2g^2	$+\ 1$	$a\,bg^2$	$+\ 2$	$a\,cg^2$	...
$a\,bfg$	...	f^2	$+\ 1$	$a\,beg$	$-\ 10$	$a\,bfg$	$-\ 6$	cfg	$-\ 10$	dfg	...
ceg	$+1$	$a\,bdg$	...	bf^2	$-\ 8$	ceg	$-\ 6$	deg	$+\ 4$	e^2g	...
cf^2	-1	bef	$-\ 10$	cdg	$+\ 4$	cf^2	$+\ 6$	df^2	$+\ 16$	ef^2	...
d^2g	-1	c^2g	...	cef	$+\ 26$	d^2g	$+\ 4$	e^2f	$-\ 12$	$a^0b^2g^2$	$+\ 1$
def	$+2$	cdf	$+\ 4$	d^2f	$-\ 8$	def	$+\ 12$	a^0b^2fg	$-\ 8$	$bcfg$	$-\ 10$
e^3	-1	ce^2	$+\ 16$	de^2	$-\ 8$	e^3	$-\ 12$	$bceg$	$+\ 26$	$bdeg$	$+\ 4$
a^0b^2eg	-1	d^2e	$-\ 12$	a^0b^2dg	$+\ 16$	a^0b^2eg	$+\ 6$	bcf^2	$+\ 24$	bdf^2	$+\ 16$
b^2f^2	$+1$	a^0b^2cg	...	b^2ef	$+\ 24$	b^2f^2	...	bd^2g	$-\ 8$	be^2f	$-\ 12$
$bcdg$	$+2$	b^2df	$+\ 16$	bc^2g	$-\ 12$	$bcdg$	$+\ 12$	$bdef$	$-\ 64$	c^2eg	$+\ 16$
$bcef$	-2	b^2e^2	$+\ 9$	$bcdf$	$-\ 64$	$bcef$	$+\ 18$	be^3	$+\ 36$	c^2f^2	$+\ 9$
bd^2f	-2	bc^2f	$-\ 12$	bce^2	$-\ 42$	bd^2f	$-\ 96$	c^2dg	$-\ 8$	cd^2g	$-\ 12$
bde^2	$+2$	$bcde$	$-\ 76$	bd^2e	$+\ 56$	bde^2	$+\ 60$	c^2ef	$-\ 42$	$cdef$	$-\ 76$
c^3g	-1	bd^3	$+\ 48$	c^3f	$+\ 36$	c^3g	$-\ 12$	cd^2f	$+\ 56$	ce^3	$+\ 48$
c^2df	$+2$	c^3e	$+\ 48$	c^2de	$+\ 4$	c^2df	$+\ 60$	cde^2	$+\ 4$	d^3f	$+\ 48$
c^2e^2	$+1$	c^2d^2	$-\ 32$	cd^3	$-\ 16$	c^2e^2	$-\ 99$	d^3e	$-\ 16$	d^2e^2	$-\ 32$
cd^2e	-3					cd^2e	$+\ 84$				
d^4	$+1$					d^4	$-\ 32$				
$\pm\ 3$		$\pm\ 142$		$\pm\ 168$		$\pm\ 263$		$\pm\ 168$		$\pm\ 142$	
$\pm\ 9$											

$$K = (\ \ x,\ y)^6$$

x^6		x^5y		x^4y^2		x^3y^3		x^2y^4		xy^5		y^6	
a^2dg	$+\ 1$	a^2eg	$+\ 2$	a^2fg	...	a^2g^2	...	$a\,bg^2$	...	$a\,cg^2$	$-\ 2$	$a\,dg^2$	$-\ 1$
ef	$-\ 1$	f^2	$-\ 2$	$a\,beg$	$+\ 10$	$a\,bfg$	...	cfg	$-\ 10$	dfg	$+\ 2$	efg	$+\ 3$
$a\,bcg$	$-\ 3$	$a\,bdg$	$-\ 2$	bf^2	$-\ 10$	ceg	...	deg	$+\ 15$	e^2g	$+\ 6$	f^3	$-\ 2$
bdf	$-\ 2$	bef	$+\ 2$	cdg	$-\ 15$	cf^2	$-\ 20$	df^2	$+\ 10$	ef^2	$-\ 6$	a^0bcg^2	$+\ 1$
be^2	$+\ 5$	c^2g	$-\ 6$	cef	$-\ 5$	d^2g	...	e^2f	$-\ 15$	$a^0b^2g^2$	$+\ 2$	$bdfg$	$+\ 2$
c^2f	$+\ 9$	cdf	$+\ 28$	d^2f	$+\ 60$	def	$+\ 60$	a^0b^2fg	$+\ 10$	$bcfg$	$-\ 2$	be^2g	$-\ 9$
cde	$-\ 17$	ce^2	$-\ 26$	de^2	$-\ 40$	e^3	$-\ 40$	$bceg$	$+\ 5$	$bdeg$	$-\ 28$	bef^2	$+\ 6$
d^3	$+\ 8$	d^2e	$+\ 4$	a^0b^2dg	$-\ 10$	a^0b^2eg	$+\ 20$	bcf^2	$-\ 30$	bdf^2	$+\ 32$	c^2fg	$-\ 5$
a^0b^3g	$+\ 2$	a^0b^2cg	$+\ 6$	b^2ef	$+\ 30$	b^2f^2	...	bd^2g	$-\ 60$	be^2f	$-\ 6$	$cdeg$	$+17$
b^2cf	$-\ 6$	b^2df	$-\ 32$	bc^2g	$+\ 15$	$bcdg$	$-\ 60$	$bdef$	$+110$	c^2eg	$+\ 26$	cdf^2	$-\ 2$
b^2de	$+\ 2$	b^2e^2	$+\ 36$	$bcdf$	$-\ 110$	$bcef$	...	be^3	$-\ 45$	c^2f^2	$-\ 36$	ce^2f	$-\ 6$
bc^2e	$+\ 6$	bc^2f	$+\ 6$	bce^2	$+\ 15$	bd^2f	...	c^2dg	$+\ 40$	cd^2g	$-\ 4$	d^3g	$-\ 8$
bcd^2	$-\ 4$	$bcde$	$-\ 58$	bd^2e	$+\ 40$	bde^2	$+\ 20$	c^2ef	$-\ 15$	$cdef$	$+\ 58$	d^2ef	$+\ 4$
c^3d	...	bd^3	$+\ 32$	c^3f	$+\ 45$	c^3g	$+\ 40$	cd^2f	$-\ 40$	ce^3	$-\ 30$	de^3	...
		c^3e	$+\ 30$	c^2de	$-\ 25$	c^2df	$-\ 20$	cde^2	$+\ 25$	d^3f	$-\ 32$		
		c^2d^2	$-\ 20$	cd^3	...	c^2e^2	...	d^3e	...	d^2e^2	$+\ 20$		
						cd^2e	...						
						d^4	...						
$\pm\ 33$		$\pm\ 146$		$\pm\ 215$		$\pm\ 140$		$\pm\ 215$		$\pm\ 146$		$\pm\ 33$	

$$L = (\ \ast x,\ y)^{10}$$

x^{10}	x^9y	x^8y^2	x^7y^3	x^6y^4	x^5y^5	x^4y^6	x^3y^7	x^2y^8	xy^9	y^{10}
$a^2bg\ \cdots$	a^2cg+1	a^2dg+3	a^2eg+2	$a^2fg\ \cdots$	$a^2g^2\ \cdots$	$abg^2\ \cdots$	acg^2-2	adg^2-3	aeg^2-1	$afg^2\ \cdots$
$cf+1$	$df+2$	$ef-3$	f^2-2	$abeg+14$	$abfg\ \cdots$	$efg-14$	$dfg-16$	$efg\ \cdots$	f^2g+1	a^0beg^2-1
$de-1$	e^2-3	$abcg\ \cdots$	$abdg+16$	bf^2-14	$ceg\ \cdots$	$deg\ \cdots$	e^2g+6	f^3+3	a^0bdg^2-2	bf^2g+1
ab^2f-1	ab^2g-1	$bdf+12$	$bef-16$	$cdg\ \cdots$	cf^2-42	df^2-28	ef^2+12	a^0bcg^2+3	$befg+2$	cdf^2+1
$bce-2$	$bcf-2$	be^2-12	c^2g-6	$cef-70$	$d^2g\ \cdots$	e^2f+42	$a^0b^2g^2+2$	$bdfg-12$	$bf^3\ \cdots$	$cefg+2$
bd^2+4	$bde+4$	c^2f-18	$cdf-32$	$d^2f\ \cdots$	$def\ \cdots$	a^0b^2fg+14	$bcfg+16$	be^2g+18	c^2g^2+3	cf^3-3
c^2d-1	c^2e-13	$cde-6$	ce^2-26	de^2+70	e^3+42	$bceg+70$	$bdeg+32$	bef^2-9	$cdfg-4$	d^2fg-4
a^0b^3e+3	cd^2+12	d^3+24	d^2e+64	a^0b^2dg+28	a^0b^2eg+42	bcf^2-42	bdf^2-64	c^2fg+12	ce^2g+13	de^2g+1
b^2cd-6	$a^0b^3f\ \cdots$	a^0b^3g-3	a^0b^2cg-12	b^2ef+42	$b^2f^2\ \cdots$	$bd^2g\ \cdots$	be^2f+12	$cdeg+6$	cef^2-15	def^2+6
bc^3+3	b^2ce+15	b^2cf+9	b^2df+64	bc^2g-42	$bcdg\ \cdots$	$bdef-56$	c^2eg+26	cdf^2-42	d^2eg-12	e^3f-3
	b^2d^2-30	b^2de+42	b^2e^2+18	$bcdf+56$	$bcef\ \cdots$	$be^3\ \cdots$	c^2f^2-18	ce^2f+9	$d^2f^2\ \cdots$	
	c^4+15	bc^2e-9	bc^2f-12	bce^2-42	$bd^2f\ \cdots$	c^2dg-70	cd^2g-64	d^3g-24	de^2f+30	
		bcd^2-84	$bcde-64$	bd^2e-112	bde^2-84	c^2ef+42	$cdef+64$	d^2ef+84	e^4-15	
		c^3d+45	bd^3-64	c^3f-64	c^3g-42	cd^2f+112	ce^3-30	de^3-45		
			c^3e+30	c^2de+70	c^2df+84	cde^2-70	d^3f+64			
			c^2d^2+40	$cd^3\ \cdots$	$c^2e^2\ \cdots$	$d^3e\ \cdots$	d^2e^2-40			
					$cd^2e\ \cdots$					
					$d^4\ \cdots$					

$$M = (\quad \ )(x,\ y)^2$$

x^2	xy	y^2
$a^2cg^2\ +\ 1$	$a^2dg^2\ -\ 2$	$a^2eg^2\ +\ 1$
$dfg\ -\ 6$	$efg\ +\ 8$	$f^2g\ -\ 1$
$e^2g\ +\ 8$	$f^3\ -\ 6$	$a\,bdg^2\ -\ 6$
$ef^2\ -\ 3$	$a\,bcg^2\ +\ 8$	$befg\ +\ 6$
$a\,b^2g^2\ -\ 1$	$bdfg\ -\ 20$	$bf^3\ \ldots$
$bcfg\ +\ 6$	$be^2g\ -\ 24$	$c^2g^2\ +\ 8$
$bdeg\ -\ 34$	$bef^2\ +\ 36$	$cdfg\ -\ 34$
$bdf^2\ +\ 48$	$c^2fg\ -\ 24$	$ce^2g\ +\ 18$
$be^2f\ -\ 18$	$cdeg\ +\ 76$	$cef^2\ \ldots$
$c^2eg\ +\ 18$	$cdf^2\ +\ 36$	$d^2eg\ +\ 4$
$c^2f^2\ -\ 45$	$ce^2f\ -\ 72$	$d^2f^2\ +\ 64$
$cd^2g\ +\ 4$	$d^3g\ -\ 32$	$de^2f\ -\ 96$
$cdef\ +\ 78$	$d^2ef\ -\ 8$	$e^4\ +\ 36$
$ce^3\ -\ 36$	$de^3\ +\ 24$	$a^0b^2cg^2\ -\ 3$
$d^3f\ -\ 48$	$a^0b^3g^2\ -\ 6$	$b^2dfg+\ 48$
$d^2e^2\ +\ 28$	$b^2cfg+\ 36$	$b^2e^2g\ -\ 45$
$a^0b^3fg\ \ldots$	$b^2deg+\ 36$	$b^2ef^2\ \ldots$
$b^2ceg\ \ldots$	$b^2df^2\ \ldots$	$bc^2fg\ -\ 18$
$b^2cf^2\ \ldots$	$b^2e^2f\ -\ 54$	$bcdeg+\ 78$
$b^2d^2g+\ 64$	$bc^2eg\ -\ 72$	$bcdf^2-\ 144$
$b^2def-\ 144$	$bc^2f^2\ -\ 54$	$bce^2f\ +\ 108$
$b^2e^3\ +\ 81$	$bcd^2g-\ 8$	$bd^3g\ -\ 48$
$bc^2dg-\ 96$	$bcdef-\ 36$	$bd^2ef+\ 96$
$bc^2ef\ +\ 108$	$bce^3\ +\ 216$	$bde^3\ -\ 72$
$bcd^2f+\ 96$	$bd^3f\ +\ 128$	$c^3eg\ -\ 36$
$bcde^2-\ 126$	$bd^2e^2-\ 192$	$c^3f^2\ +\ 81$
$bd^3e\ +\ 16$	$c^3dg\ +\ 24$	$c^2d^2g+\ 28$
$c^4g\ +\ 36$	$c^3ef\ +\ 216$	$c^2def-\ 126$
$c^3df\ -\ 72$	$c^2d^2f-\ 192$	$c^2e^3\ -\ 27$
$c^3e^2\ -\ 27$	$c^2de^2-\ 378$	$cd^3f\ +\ 16$
$c^2d^2e+\ 96$	$cd^3e\ +\ 464$	$cd^2e^2+\ 96$
$cd^4\ -\ 32$	$d^5\ -\ 128$	$d^4e\ -\ 32$

$\pm\ 9$	$\pm\ 8$	$\pm\ 1$
182	180	$\pm\ 136$
497	1120	$\pm\ 551$
$\pm\ 688$	$\pm\ 1308$	$\pm\ 688$

$$N = (\qquad \ddot{\smile}x,\ y)^4$$

x^4		x^3y		x^2y^2		xy^3		y^4	
a^2bg^2	...	a^2cg^2	− 1	a^2dg^2	...	a^2eg^2	+ 1	a^2fg^2	...
cfg	− 1	dfg	+ 4	efg	+ 3	f^2g	− 1	$a\,beg^2$	+ 1
deg	+ 1	e^2g	...	f^3	− 3	$a\,bdg^2$	− 4	bf^2g	− 1
df^2	+ 3	ef^2	− 3	$a\,bcg^2$	− 3	$befg$	+ 4	cdg^2	− 1
e^2f	− 3	$a\,b^2g^2$	+ 1	$bdfg$	...	bf^3	...	$cefg$	− 2
$a\,b^2fg$	+ 1	$bcfg$	− 4	be^2g	− 15	c^2g^2	...	cf^3	+ 3
$bceg$	+ 2	$bdeg$	− 16	bef^2	+ 18	$cdfg$	+ 16	d^2fg	+ 4
bcf^2	− 3	bdf^2	...	c^2fg	+ 15	ce^2g	− 22	de^2g	− 1
bd^2g	− 4	be^2f	+ 18	$cdeg$	...	cef^2	+ 6	def^2	− 6
$bdef$	− 12	c^2eg	+ 22	cdf^2	− 36	d^2eg	+ 8	e^3f	+ 3
be^3	+ 15	c^2f^2	+ 3	ce^2f	+ 9	d^2f^2	− 32	$a^0b^2dg^2$	− 3
c^2dg	+ 1	cd^2g	− 8	d^3g	...	de^2f	+ 36	b^2efg	+ 3
c^2ef	+ 9	$cdef$	− 48	d^2ef	+ 24	e^4	− 12	b^2f^3	...
cd^2f	+ 4	ce^3	+ 12	de^3	− 12	$a^0b^2cg^2$	+ 3	bc^2g^2	+ 3
cde^2	− 21	d^3f	+ 32	$a^0b^3g^2$	+ 3	b^2dfg	...	$bcdfg$	+ 12
d^3e	+ 8	d^2e^2	− 12	b^2cfg	− 18	b^2e^2g	− 3	bce^2g	− 9
a^0b^3eg	− 3	a^0b^3fg	...	b^2deg	+ 36	b^2ef^2	...	$bcef^2$	− 9
b^3f^2	...	b^2ceg	− 6	b^2df^2	...	bc^2fg	− 18	bd^2eg	− 4
b^2cdg	+ 6	b^2cf^2	...	b^2e^2f	− 27	$bcdeg$	+ 48	bd^2f^2	− 32
b^2cef	+ 9	b^2d^2g	+ 32	bc^2eg	− 9	$bcdf^2$	...	bde^2f	+ 66
b^2d^2f	+ 32	b^2def	...	bc^2f^2	+ 27	bce^2f	− 18	be^4	− 27
b^2de^2	− 39	b^2e^3	− 27	bcd^2g	− 24	bd^3g	− 32	c^3fg	− 15
bc^3g	− 3	bc^2dg	− 36	$bcdef$	...	bd^2ef	+ 32	c^2deg	+ 21
bc^2df	− 66	bc^2ef	+ 18	bce^3	+ 27	bde^3	− 12	c^2df^2	+ 39
bc^2e^2	+ 18	bcd^2f	− 32	bd^3f	...	c^3eg	− 12	c^2e^2f	− 18
bcd^2e	+ 76	$bcde^2$	+ 84	bd^2e^2	− 12	c^3f^2	+ 27	cd^3g	− 8
bd^4	− 32	bd^3e	− 32	c^3dg	+ 12	c^2d^2g	+ 12	cd^2ef	− 76
c^4f	+ 27	c^4g	+ 12	c^3ef	− 27	c^2def	− 84	cde^3	+ 45
c^3de	− 45	c^3df	+ 12	c^2d^2f	+ 12	c^2e^3	+ 45	d^4f	+ 32
c^2d^3	+ 20	c^3e^2	− 45	c^2de^2	...	cd^3f	+ 32	d^3e^2	− 20
		c^2d^2e	+ 20	cd^3e	...	cd^2e^2	− 20		
		cd^4	...	d^5	...	d^4e	...		

$$O = (\ \ \text{Ⓧ}\,x,\ y)^8$$

x^8	x^7y	x^6y^2	x^5y^3	x^4y^4	x^3y^5	x^2y^6	xy^7	y^8
a^3fg ...	a^3g^2 ...	a^2bg ...	$a^2cg^2 - 1$	a^2dg^2 ...	$a^2eg^2 + 1$	a^2fg^2 ...	a^2g^3 ...	$a\,bg^3$ ...
a^2beg ...	a^2bfg ...	$cfg - 3$	$dfg + 4$	$efg + 5$	$f^2g - 1$	$a\,beg^2 + 3$	$a\,bfg^2$ ...	cfg^2 ...
cdg ...	$ceg - 1$	$deg + 10$	$e^3g + 7$	$f^3 - 5$	$a\,bdg^2 - 4$	$bf^2g - 3$	$ceg^2 + 1$	deg^2 ...
bf^2 ...	$cf^2 - 2$	$df^2 + 2$	$ef^2 - 10$	$a\,bcg^2 - 5$	$befg + 18$	$cdg^2 - 10$	$cf^2g - 1$	df^2g ...
$cef - 1$	$d^2g + 3$	$e^2f - 9$	$a\,b^2g^2 + 1$	$bdfg$ ...	$bf^3 - 14$	$cefg + 22$	$d^2g^2 - 3$	e^2fg ...
$d^2f + 3$	$def + 6$	$a\,b^2fg + 3$	$bcfg - 18$	$be^2g + 10$	$c^2g^2 - 7$	$cf^3 - 12$	$defg + 14$	ef^3 ...
$de^2 - 2$	$e^3 - 6$	$bceg - 22$	$bdeg - 16$	$bef^2 - 5$	$cdfg + 16$	$d^2fg + 19$	$df^3 - 8$	$a^0b^2fg^2$ ...
$a\,b^2dg$ ...	$a\,b^2eg + 1$	$bcf^2 - 2$	$bdf^2 + 28$	$c^2fg - 10$	$ce^2g - 1$	$de^2g - 24$	$e^3g - 9$	$bceg^2 + 1$
$b^2ef + 1$	$b^2f^2 + 2$	$bd^2g - 19$	$be^2f + 4$	$cdeg$ ...	$cef^2 - 1$	$def^2 - 4$	$e^2f^2 + 6$	$bcf^2g - 1$
bc^2g ...	$bcdg - 14$	$bdef + 34$	$c^2eg + 1$	$cdf^2 + 80$	$d^2eg - 13$	$e^3f + 9$	$a^0b^2eg^2 + 2$	$bd^2g^2 - 3$
$bcdf - 14$	$bcef$ ...	$be^3 + 3$	$c^2f^2 + 24$	$ce^2f - 55$	$d^2f^2 + 38$	$a^0b^2dg^2 - 2$	$b^2f^2g - 2$	$bdefg + 14$
$bce^2 + 11$	$bd^2f - 18$	$c^2dg + 24$	$cd^2g + 13$	d^3g ...	$de^2f - 62$	$b^2efg + 2$	$bcdg^2 - 6$	$bdf^3 - 8$
$bd^2e + 1$	$bde^2 + 26$	$c^2ef + 4$	$cdef - 6$	$d^2ef - 65$	$e^4 + 30$	b^2f^3 ...	$bcefg$ ...	$be^3g - 9$
$c^3f + 9$	$c^3g + 9$	$cd^2f - 58$	$ce^3 - 37$	$de^3 + 50$	$a^0b^2cg^2 + 10$	$bc^2g^2 + 9$	$bcf^3 + 6$	$be^2f^2 + 6$
$c^2de - 14$	$c^2df + 10$	$cde^2 - 42$	$d^3f - 52$	$a^0b^3g^2 + 5$	$b^2dfg - 28$	$bcdfg - 34$	$bd^2fg + 18$	$c^2dg^2 + 2$
$cd^3 + 6$	$c^2e^2 + 13$	$d^3e + 38$	$d^2e^2 + 58$	$b^2cfg + 5$	$b^2e^2g - 24$	$bce^2g - 4$	$bde^2g - 10$	$c^2efg - 11$
a^0b^3cg ...	$cd^2e - 53$	$a^0b^3eg + 12$	$a^0b^3fg + 14$	$b^2deg - 80$	$b^2ef^2 + 42$	$bcef^2 + 57$	$bdef^2 - 20$	$c^2f^3 + 9$
$b^3df + 8$	$d^4 + 24$	b^3f^2 ...	$b^2ceg + 1$	b^2df^2 ...	$bc^2fg - 4$	$bd^2eg + 58$	$be^2f + 12$	$cd^2fg - 1$
$b^3e^2 - 9$	$a^0b^3dg + 8$	$b^2cdg + 4$	$b^2cf^2 - 42$	$b^2e^2f + 60$	$bcdeg + 6$	$bd^2f^2 + 16$	$c^3g^2 + 6$	$cde^2g + 14$
$b^2c^2f - 6$	$b^3ef - 6$	$b^2cef - 57$	$b^2d^2g - 38$	$bc^2eg + 55$	$bcdf^2$ ...	$bde^2f - 110$	$c^2efg - 26$	$cdef^2 - 16$
$b^2cde + 16$	$b^2c^2g - 6$	$b^2d^2f - 16$	b^2def ...	$bc^2f^2 - 60$	$bce^2f - 18$	$be^4 + 45$	$c^2e^2g - 13$	$ce^3f + 3$
$b^2d^3 - 8$	$b^2cdf + 20$	$b^2de^2 + 30$	$b^2e^3 + 36$	$bcd^2g + 55$	$bd^3g + 52$	$c^3fg - 3$	$c^2ef^2 + 21$	$d^3eg - 6$
$bc^3e - 3$	$b^2ce^2 - 21$	$bc^3g - 9$	$bc^2dg + 62$	$bcdef$ ...	$bd^2ef - 66$	$c^2deg + 42$	$cd^2eg + 53$	$d^3f^2 + 8$
$bc^2d^2 + 2$	$b^2d^2e - 2$	$bc^2df + 110$	$bc^2ef + 18$	$bce^3 - 60$	$bde^3 + 30$	$c^2df^2 - 30$	$cd^2f^2 + 2$	$d^2e^2f - 2$
c^4d ...	$bc^3f - 12$	$bc^2e^2 + 12$	$bcd^2f + 66$	bd^3f ...	$c^3eg + 37$	$c^2e^2f - 12$	$cde^2f - 52$	de^4 ...
	$bc^2de + 52$	$bcd^2f + 66$	$bcde^2 - 126$	$bd^2e^2 + 60$	$c^3f^2 - 66$	$cd^3g - 38$	$ce^4 + 15$	
	$bcd^3 - 28$	$bcde^2 - 126$	$bd^3e + 24$	$c^3dg - 50$	$c^2d^2g - 58$	$cd^2ef + 87$	$d^4g - 24$	
	$c^4e - 15$	$bd^3e + 24$	$c^4g - 30$	$c^3ef + 60$	$c^2def + 126$	$cde^3 - 40$	$d^3ef + 28$	
	$c^3d^2 + 10$	$c^4f + 45$	$c^3df - 30$	$c^2d^2f - 15$	$c^2e^3 - 60$	$d^4f - 16$	$d^2e^3 - 10$	
		$c^3de + 40$	$c^3e^2 + 60$	c^2de^2 ...	$cd^3f - 24$	$d^3e^2 + 10$		
		$c^2d^3 - 10$	$c^2d^2e - 15$	cd^3e ...	$cd^2e^2 + 15$			
			cd^4 ...	d^5 ...	d^4e ...			

$$P = (\quad \text{\}x, y)^0, \text{ Invt.}$$

$a^3b^0g^3$	$\ldots$
$a^2b\,fg^2$	$\ldots$
$a^2b^0ceg^2$	$\ldots$
cfg^2	$\ldots$
d^2g^2	$+\ 1$
$defg$	$-\ 6$
df^3	$+\ 4$
e^3g	$+\ 4$
e^2f^2	$-\ 3$
$a\,b^2eg^2$	$\ldots$
f^2g	$\ldots$
$a\,b\,cdg^2$	$-\ 6$
$cefg$	$+\ 18$
cf^3	$-\ 12$
d^2fg	$+\ 12$
de^2g	$-\ 18$
def^2	$\ldots$
e^3f	$+\ 6$
$b^0c^3g^2$	$+\ 4$
c^2dfg	$-\ 18$
c^2e^2g	$-\ 24$
c^2ef^2	$+\ 30$
cd^2eg	$+\ 54$
cd^2f^2	$-\ 12$
cd^2ef	$-\ 42$
ce^4	$+\ 12$
d^4g	$-\ 20$
d^3ef	$+\ 24$
d^2e^3	$-\ 8$

$a^0b^3dg^2$	$+\ 4$
efg	$-\ 12$
f^3	$+\ 8$
$b^2c^2g^2$	$-\ 3$
$cdfg$	$\ldots$
ce^2g	$+\ 30$
cef^2	$-\ 24$
d^2eg	$-\ 12$
d^2f^2	$-\ 24$
de^2f	$+\ 60$
e^4	$-\ 27$
$b\,c^3fg$	$+\ 6$
c^2deg	$-\ 42$
c^2df^2	$+\ 60$
c^2e^2f	$-\ 30$
cd^3g	$+\ 24$
cd^2ef	$-\ 84$
cde^3	$+\ 66$
d^4f	$+\ 24$
d^3e^2	$-\ 24$
b^0c^4eg	$+\ 12$
c^4f^2	$-\ 27$
c^3d^2g	$-\ 8$
c^3def	$+\ 66$
c^3e^3	$-\ 8$
c^2d^3f	$-\ 24$
$c^2d^2e^2$	$-\ 39$
cd^4e	$+\ 36$
d^6	$-\ 8$

$$Q = (\quad \text{\textcircled{}} x,\ y)^6$$

	51	55	55	58	55	55	51
	$a^3b^0dg^2$ ...	$a^3b^0eg^2$ ...	$a^3b^0fg^2$ ...	$a^3b^0g^3$ ...	$a^2b\,g^3$ ...	$a^2b^0cg^3$ ...	$a^2b^0dg^3$ ...
	efg ...	f^2g ...	$a^2b\,eg^2$ ...	$a^2b\,fg^2$ ...	b^0cfg^2 ...	dfg^2 ...	efg^2 ...
	f^3 ...	$a^2b\,dg^2$ ...	f^2g ...	b^0ceg^2 ...	$deg^2\ +\ 5$	$e^2g^2\ +\ 2$	f^3g ...
	$a^2b\,cg^2$ ...	efy ...	$b^0cdg^2\ -\ 5$	cf^2g ...	$df^2g\ -\ 5$	$ef^2g\ -\ 4$	$a\,b\,cg^3$ ...
	dfg ...	f^3 ...	$cefg\ +\ 15$	d^2g^2 ...	$e^2fg\ -\ 5$	$f^4\ +\ 2$	dfg^2 ...
	e^2g ...	$a^2b^0c^2g^2\ -\ 2$	$cf^3\ -\ 10$	$defg\ +\ 20$	$ef^3\ +\ 5$	$a\,b^2g^3$ ...	$e^2g^2\ +\ 2$
	ef^2 ...	$cdfg\ +\ 6$	$d^2fg\ +\ 20$	$df^3\ -\ 20$	$a\,b^2fg^2$ ...	$b\,cfg^2$ ...	$ef^2g\ -\ 4$
	$b^0c^2fg\ -\ 2$	$ce^2g\ +\ 8$	$de^2g\ -\ 25$	$e^3g\ -\ 20$	$b\,ceg^2\ -\ 15$	$deg^2\ -\ 6$	$f^4\ +\ 2$
	$cdeg\ +\ 5$	$cef^2\ -\ 10$	$def^2\ -\ 10$	$e^2f^2\ +\ 20$	$cf^2g\ +\ 15$	$df^2g\ +\ 6$	$b^0c^2fg^2$ ...
10	$cdf^2\ +\ 6$	$d^2eg\ -\ 10$	$e^3f\ +\ 15$	$a\,b^2eg^2$ ...	$d^2g^2\ -\ 20$	$e^2fg\ +\ 6$	$cdeg^2-\ 5$
	$ce^2f\ -\ 7$	$d^2f^2\ +\ 18$	$a\,b^2dg^2\ +\ 5$	f^2g ...	$defg\ +\ 90$	$ef^3\ -\ 6$	$cdf^2g+\ 5$
	$d^3g\ -\ 3$	$de^2f\ -\ 22$	$efg\ -\ 15$	$b\,cdg^2\ -\ 20$	$df^3\ -\ 50$	$b^0c^2eg^2\ -\ 8$	$ce^2fg\ +\ 5$
	$d^2ef\ -\ 3$	$e^4\ +\ 12$	$f^3\ +\ 10$	$cefg$ ...	$e^3g\ -\ 35$	$c^2fg\ +\ 8$	$cef^3\ -\ 5$
	$de^3\ +\ 4$	$a\,b^2cg^2\ +\ 4$	$b\,c^2g^2\ +\ 5$	$cf^3\ +\ 20$	$e^2f^2\ -\ 15$	$cd^2g^2\ +\ 10$	$d^3g^2\ +\ 3$
	$a\,b^3g^2$ ...	$dfg\ -\ 6$	$cdfg\ -\ 90$	d^2fg ...	$b^0c^2dg^2\ +\ 25$	$cdefg+\ 4$	$d^2efg-\ 7$
	$b^2cfg\ +\ 4$	$e^2g\ -\ 8$	$ce^2g\ +\ 40$	$de^2g\ +\ 40$	$c^2efg\ -\ 40$	$cdf^3\ -\ 24$	$d^2f^3\ -\ 2$
	$deg\ -\ 5$	$ef^2\ +\ 10$	$cef^2\ +\ 40$	$def^2\ -\ 20$	$c^2f^3\ +\ 15$	$ce^3g\ -\ 8$	$de^3g\ +\ 1$
	$df^2\ -\ 6$	$a\,b\,c^2fg\ -\ 6$	$d^2eg\ +\ 50$	$e^3f\ -\ 20$	$cd^2fg\ -\ 50$	$ce^2f^2\ +\ 18$	$de^2f^2+\ 8$
	$e^2f\ +\ 7$	$cdeg\ -\ 4$	$d^2f^2\ +\ 10$	$b^0c^3g^2\ +\ 20$	$cde^2g\ +\ 45$	$d^3fg\ -\ 22$	$e^4f\ -\ 3$
20	$b\,c^2eg\ -\ 5$	$cdf^2\ -\ 68$	$de^2f\ -\ 40$	$c^2dfg-\ 40$	$cdef^2\ +\ 5$	$d^2e^2g\ +\ 14$	$a^0b^3g^3$ ...
	$c^2f^2\ -\ 6$	$ce^2f\ +\ 76$	$e^4\ -\ 15$	c^2e^2g ...	ce^3f ...	$d^2ef^2+\ 42$	b^2cfg^2 ...
	$cd^2g\ +\ 7$	$d^3g\ +\ 22$	$b^0c^3fg\ +\ 35$	$c^2ef^2\ -\ 20$	$d^3eg\ -\ 5$	$de^3f\ -\ 46$	$deg^2\ -\ 6$
	$cdef\ -\ 16$	$d^2ef\ +\ 38$	$c^2deg-\ 45$	cd^2eg ...	$d^3f^2\ +\ 50$	$e^5\ +\ 12$	$df^2g\ +\ 6$
	$ce^3\ +\ 23$	$de^3\ -\ 58$	c^2df^2 ...	$cd^2f^2\ +\ 60$	$d^2e^2f\ -\ 65$	$a^0b^3fg^2$ ...	$e^2fg\ +\ 6$
	$d^3f\ +\ 30$	$b^0c^3eg\ +\ 8$	$c^2e^2f\ -\ 65$	$cde^2f\ -\ 20$	$de^4\ +\ 20$	$b^2ceg^2\ +\ 10$	$ef^3\ -\ 6$
	$d^2e^2\ -\ 33$	$c^3f^2\ +\ 42$	$cd^3g\ +\ 5$	$ce^4\ +\ 20$	$a^0b^3eg^2\ +\ 10$	$cf^2g\ -\ 10$	$b\,c^2eg^2\ +\ 7$
	$b^0c^3dg\ -\ 1$	$c^2d^2g-\ 14$	$cd^2ef+\ 65$	d^4g ...	$f^2g\ -\ 10$	$d^2g^2\ -\ 18$	$c^2f^2g-\ 7$
	$c^3ef\ +\ 36$	$c^2def\ -\ 82$	$cde^3\ -\ 45$	$d^3ef\ -\ 20$	$b^2cdg^2\ +\ 10$	$defg\ +\ 68$	$cd^2g^2+\ 3$
	$c^2d^2f\ -\ 37$	$c^2e^3\ -\ 44$	$d^4f\ -\ 20$	d^2e^3 ...	$cefg\ -\ 40$	$df^3\ -\ 32$	$cdefg+\ 16$
30	$c^2de^2\ -\ 53$	$cd^3f\ +\ 12$	$d^3e^2\ -\ 20$	$a^0b^3dg^2\ +\ 20$	$cf^3\ +\ 30$	$e^3g\ -\ 42$	$cdf^3\ -\ 22$

$$Q = (\ \ )x,\ y)^6 \ \text{(continued)}.$$

51	55	55	58	55	55	51
$a\,b^0cd^3e + 79$	$a\,b^0cd^2e^2 + 122$	$a^0b^3cg^2 - 5$	$a^0b^3efg - 20$	$a^0b^2d^2fg - 10$	$a^0b^2e^2f^2 + 24$	$a^0b\,ce^3g - 86$
$d^5 - 24$	$d^4e - 44$	$dfg + 50$	$f^3 \ldots$	$de^2g \ldots$	$b\,c^2dg^2 + 22$	$ce^2f^2 + 39$
$a^0b^4fg - 2$	$a^0b^4g^2 - 2$	$e^2g - 15$	$b^2c^2g^2 - 20$	$def^2 + 10$	$c^2efg - 76$	$d^3fg - 30$
$b^3ceg + 5$	$b^3cfg + 6$	$ef^2 - 30$	$cdfg + 20$	$e^3f \ldots$	$c^2f^3 + 54$	$d^2e^2g + 37$
$cf^2 + 6$	$deg + 24$	$b^2c^2fg - 15$	$ce^2g + 20$	$b\,c^3g^2 - 15$	$cd^2fg - 38$	$d^2ef^2 + 50$
$d^2g + 2$	$df^2 + 32$	$cdeg - 5$	$cef^2 \ldots$	$c^2dfg + 40$	$cde^2g + 82$	$de^3f - 84$
$def + 22$	$e^2f - 54$	$cdf^2 - 10$	$d^2eg - 60$	$c^2e^2g + 65$	$cdef^2 - 50$	$e^5 + 27$
$e^3 - 27$	$b^2c^2eg - 18$	$ce^2f + 60$	$d^2f^2 \ldots$	$c^2ef^2 + 60$	$ce^3f + 6$	$b^0c^3dg^2 - 4$
$b^2c^2dg - 8$	$c^2f^2 - 24$	$d^3g - 50$	$de^2f + 40$	$cd^2eg - 65$	$d^3eg - 12$	$c^3efg - 23$
$c^2ef - 39$	$cd^2g - 42$	$d^2ef - 10$	$e^4 \ldots$	$cd^2f^2 + 10$	$d^3f^2 + 64$	$c^3f^3 + 27$
$cd^2f - 50$	$cdef + 50$	$de^3 + 30$	$b\,c^3fg + 20$	$cde^2f + 10$	$d^2e^2f - 82$	$c^2d^2fg + 33$
$cde^2 + 107$	$ce^3 + 54$	$b\,c^3eg \ldots$	$c^2deg + 20$	$ce^4 \ldots$	$de^4 + 30$	$c^2de^2g + 53$
$d^3e - 22$	$d^3f - 64$	$c^3f^2 \ldots$	$c^2df^2 - 40$	$d^4g + 20$	$b^0c^4g^2 - 12$	$c^2def^2 - 107$
$b\,c^4g + 3$	$d^2e^2 + 32$	$c^2d^2g + 65$	$c^2e^2f \ldots$	$d^3ef - 10$	$c^3dfg + 58$	$c^2e^3f + 21$
$c^3df + 84$	$b\,c^3dg + 46$	$c^2def - 10$	$cd^3g + 20$	$d^2e^3 + 5$	$c^3e^2g + 44$	$cd^3eg - 79$
$c^3e^2 - 21$	$c^3ef - 6$	$c^2e^3 - 30$	$cd^2ef \ldots$	$b^0c^4fg + 15$	$c^3ef^2 - 54$	$cd^3f^2 + 22$
$c^2d^2e - 102$	$c^2d^2f + 82$	$cd^3f + 10$	$cde^3 - 40$	$c^3deg + 45$	$c^2d^2eg - 122$	$cd^2e^2f + 102$
$cd^4 + 44$	$c^2de^2 - 112$	$cd^2e^2 - 75$	$d^4f \ldots$	$c^3df^2 - 30$	$c^2d^2f^2 - 32$	$cde^4 - 45$
$b^0c^5f - 27$	$cd^3e - 34$	$d^4e + 40$	$d^3e^2 + 20$	$c^3e^2f + 30$	$c^2de^2f + 112$	$d^5g + 24$
$c^4de + 45$	$d^5 + 32$	$b^0c^4dg - 20$	$b^0c^4eg - 20$	$c^2d^3g + 20$	$c^2e^4 - 30$	$d^4ef - 44$
$c^3d^3 - 20$	$b^0c^5g - 12$	$c^4ef \ldots$	$c^4f^2 \ldots$	$c^2d^2ef + 75$	$cd^4g + 44$	$d^3e^3 + 20$
	$c^4df - 30$	$c^3d^2f - 5$	$c^3d^2g \ldots$	$c^2de^3 - 50$	$cd^3ef + 34$	
	$c^4e^2 + 30$	$c^3de^2 + 50$	$c^3def + 40$	$cd^4f - 40$	$cd^2e^3 - 30$	
	$c^3d^2e + 30$	$c^2d^3e - 25$	$c^3e^3 \ldots$	$cd^3e^2 + 25$	$d^5f - 32$	
	$c^2d^4 - 20$	$cd^5 \ldots$	$c^2d^3f - 20$	$d^5e \ldots$	$d^4e^2 + 20$	
			$c^2d^2e^2 \ldots$			
			$cd^4e \ldots$			
			$d^6 \ldots$			