Some errata for: Modular functions and modular forms

by

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corrections by: Verhoek

t=top m=middle b=bottom

page	where	what	correction
23	m	Note that the surjectivity $\mathrm{SL}_2(\mathbf{Z}) \to \mathrm{SL}_2(\mathbf{Z}/N\mathbf{Z})$ is implies	Note that the surjectivity $\mathrm{SL}_2(\mathbf{Z}) \to \mathrm{SL}_2(\mathbf{Z}/N\mathbf{Z})$ implies
32	m	Hence $\sum e_{P'} - 1 = (m - v_2)/2$	Hence $\sum(e_{P'} - 1) = (m - v_2)/2$
32	m	Hence $\sum e_{P'} - 1 = 2(m - v_3)/2$	Hence $\sum(e_{P'} - 1) = 3(m - v_3)/2$
36	m	and so we need that $\det \begin{pmatrix} a & b \\ c & d \end{pmatrix} > 1$	and so we need that $\det \begin{pmatrix} a & b \\ c & d \end{pmatrix} > 0$
43	b	Consider $\Gamma(2)$. Then $\Gamma(2)$ is of index	The word then makes no sense
47	b	$\mathrm{ord}_P(\omega) = \mathrm{ord}_Q(f) \geq 0$ at the remaining cusps	at the remaining points
48	b	$\mathrm{ord}_Q(f) = \mathrm{ord}_P(\omega) - k$ for Q a cusp	$\mathrm{ord}_Q(f) = \mathrm{ord}_P(\omega) + k$ for Q a cusp
52	b	$2\zeta(2k) + \frac{2(2\pi i)^{2k}}{(2k-1)!} \sum_{n=1}^{\infty} \sigma_{2k-1}(a) q^n$	$2\zeta(2k) + \frac{2(2\pi i)^{2k}}{(2k-1)!} \sum_{n=1}^{\infty} \sigma_{2k-1}(n) q^n$
53	b	$j_\gamma(\gamma'\tau) \cdot j_{\gamma'}(z) \cdot z$	$j_\gamma(\gamma'\tau) \cdot j_{\gamma'}(\tau) \cdot z$
56	m	Thus we can consider the series $\sum_{\Gamma_0 \backslash \Gamma'} \frac{h(\gamma z)}{j_\gamma(z)}$	Thus we can consider the series $\sum_{\gamma \in \Gamma_0 \backslash \Gamma'} \frac{h(\gamma z)}{j_\gamma(z)}$
56	b	is the series $\phi_n(z) = \sum_{\Gamma_0 \backslash \Gamma'} \cdots$	is the series $\phi_n(z) = \sum_{\gamma \in \Gamma_0 \backslash \Gamma'} \cdots$

59	m	$\langle f, \phi_n \rangle = \dots$	on the right hand side there seems to be a summation missing
62	m-b	then the coefficient of $(p^{-s})^n$ in $\prod L_p(s)$	then the coefficient of n^{-s} in $\prod_p L_p(s)$
64	m	Write $1 - c(p)X + p^{2k-1-2s}$	Write $1 - c(p)X + p^{2k-1-2s}X^2$
65	b	then there is a unique chain $\Lambda \supset \Lambda' \supset \Lambda$	then there is a unique chain $\Lambda \supset \Lambda' \supset \Lambda''$
64	m	$$L(E,s) = \prod_{p\text{good}} \frac{1}{1 - a_p p^{-s} + p^{1-2s}}$$	bad factors are missing
67	b	$ad = n, \quad a \geq 1, \quad 0 \leq b < d - 1$	$ad = n, \quad a \geq 1, \quad 0 \leq b \leq d - 1$
71	t	run through a particular set of representatives of $\Gamma(1) \setminus M(n)$.	run through a particular set of representatives of $\Gamma(1) \setminus M(n)$.
72	b	$p^{k-1} \sum \langle f, g\|_k \alpha_i^{-1} \rangle = p^{k-1} \sum \langle f, g\|_k \alpha' \rangle$	$p^{k-1} \sum \langle f, g\|_k \alpha_i^{-1} \rangle = \sum \langle f, g\|_k \alpha' \rangle$
75	t	or better, the double coset $\Gamma\alpha$	or better, the double coset $\Gamma\alpha\Gamma$
77	b	if $\Gamma\alpha = \cup \Gamma\alpha_i$	if $\Gamma\alpha\Gamma = \cup \Gamma\alpha_i$
83	t	and so $j(N\gamma_i z) = j(N\gamma_i' z)$ all z implies	and so $j(N\gamma_i z) = j(N\gamma_i' z)$ for all z implies
86	m	of varieties $W \to V$	of varieties $V \to W$
86	m	$F \in \mathfrak{a} \implies F(P_1, \dots, P_n) \in \mathfrak{b}$	$F \in \mathfrak{a} \implies F(P_1, \dots, P_m) \in \mathfrak{b}$

92	t	such that $S(k^{al})$ is cyclic subgroup of $S(k^{al})$	such that $S(k^{al})$ is a cyclic subgroup of $E(k^{al})$
93	t	such that the map $$(m,m') \mapsto (mt, mt') : \mathbf{Z}/N\mathbf{Z} \times \mathbf{Z}/N\mathbf{Z} \to E(k)$$	such that the map $$(m,m') \mapsto (mt_1, m't_2) : \mathbf{Z}/N\mathbf{Z} \times \mathbf{Z}/N\mathbf{Z} \to E(k)$$
96	m	$$\Lambda_\chi(s) = (\frac{m}{2\pi})^{-s}\Gamma(s)L_{\chi(s)}$$	$$\Lambda_\chi(s) = (\frac{m}{2\pi})^{s}\Gamma(s)L_{\chi(s)}$$
98	b	is the correspondence: $$X \xleftarrow{\alpha} Y \xrightarrow{\beta} X'$$	is the correspondence: $$X' \xleftarrow{\alpha} Y \xrightarrow{\beta} X$$
106	m	$= \det(\rho_l(\Pi_p)) =$	$= \det(\rho_l(\Pi_q) - 1) =$
106	b	When N is one of the integers $11, 14, 15, 17, 19, 20, 21, 24, 17, 32, 36$	When N is one of the integers $11, 14, 15, 17, 19, 20, 21, 24, 27, 32, 36$
106	b	the number of cusps of $\Gamma_0(N)$ is $\sum \phi(d, N/d)$	the number of cusps of $\Gamma_0(N)$ is $\sum \phi(\gcd(d, N/d))$
109	m	$L(E,s) = \sum_{n=1}^{\infty} a_n q^n$	$L(E,s) = \sum_{n=1}^{\infty} a_n n^{-s}$
109	m	$\Lambda_\chi(E,s) = N^{s/2}(\frac{m}{2\pi})^s\Gamma(s)\sum_{n=1}^{\infty} a_n\chi(n)q^n$	$\Lambda_\chi(E,s) = N^{s/2}(\frac{m}{2\pi})^s\Gamma(s)\sum_{n=1}^{\infty} a_n\chi(n)n^{-s}$
109	m	$\Lambda_\chi(E,s) = N^{s/2}(\frac{m}{2\pi})^s\Gamma(s)\sum_{n=1}^{\infty} a_n\chi(n)q^n$	$\Lambda_\chi(E,s) = N^{s/2}(\frac{m}{2\pi})^s\Gamma(s)\sum_{n=1}^{\infty} a_n\chi(n)n^{-s}$
119	t	assume that $\mathfrak{p}$ does not divide	Here $\mathfrak{p}$ is undefined, probably $\mathfrak{p} = \mathrm{char}(k)$
121	t	Lemma 12.25	There is no relation between the $\mathfrak{p}$ and S.