

Hcd]W' \* \_\_\_\_\_ CD! G BYh&&" \_\_\_\_\_ AUh) ž &\$%)

: fca . 6fi W7" 6VfbXhVfVfbXh4a UH 'i j VWXi žK Yb! 7\ ]b[ K ]bb]Y@fk ]4a UH 'bg 'YXi ž  
UbX >F" Ga Uhf]a Uhf]a UH 'k ]g]WXi ž  
G V'VM' >cg]d\ @\byf CV]h Ufm

>cg]d\ @\byf kUg Vcfb ]b BYk Mf\_ 7]hmcB CVMWf &- ž % %& hc @ci ]g UbX FUMY  
ffcg]bVi a ž UbX X]YX ]b <Ug YfZcfXz D5 cb 5i [i gh) ž &\$% " @\byf]g]g]Vb]h]V]kcf\_  
kUgdf]a U]m]b]b]V]b]YX k]h U hca cfd\ ]M]zfa g žcf X]g]b]b]bi ci g [ fci dg UbX fYUHX  
bi a VYf h Ycfh

ž % \* ( ž @\byf di V ]g] YX cbY cZH Y Z]ghfYU]g]g]b 9b[ ]g] cb U hca cfd\ ]M]zfa g O@  
k\ ]W ]b]V]YX Vch h Y \ ]g]cf]W V] ]bb]b] [ g cZH Y g V'VM'Ug kY~ Ug `UHY XYf Ycd!  
a Yb]g] Xi Y Ygd]V]U' mtc 9' < YV]ž < " D]H]ggcbž < " FUKYa UWYž UbX 7" @' G]Y " H ]g  
Vcc\_ \ Ug]V]W]a YUV]Ug]V]UbX \ Ug]g]f] YX Ug]b ]b]fcXi V]cfm]Vcc\_ hc U hca cfd\ ]M]zfa g  
žcf a Ubn] ]b]YfU]cbg]

@\byf]g]g]a ]bU 'e]b]hd]U]Yf k]h C ] Yf 5h ]b O]b]fcXi WX Ua Yh cX hc gh Xrh YU]h!  
a Y]V]Za cXi `Uf žcf a gk\ ]W ž bX]a Yb]U' m]M]b] ]YX h Y Z]YX' h Y ]X]Uk Ug hc W' VM'  
hc [ Yh Yf žcf a g žcf V]b] [ fi YbW g V] fci dg  $\Gamma_0(m)$  žcf U'  $m \geq 1$  : cf žcf a g cZ  $\Gamma_0(m)$  ž h Ym  
X]g]b] [ i ]g] YX žc žcf a g] k\ ]W U]g] b]U] fU' m]zfa W]gd žcf a g cZ  $\Gamma_0(n)$  k]h n X]j ]X]b]  
m ž UbX ž b]Yk žcf a g] k\ ]W U]Y žcf a gk\ ]W [ Ybi ]b]Ym]j Y ]b  $\Gamma_0(m)$  " H Ym]cb]Y]YX h Y  
ž h Ycfm]Z b]Yk žcf a g] k\ ]W fYXi W]g h Y gh XmcZH Y U]h a Y]V]Z a cXi `Uf žcf a g žcf  
 $\Gamma_0(m)$  hc h UhcZ b]Yk žcf a g] UbX h Ym]gh X]YX h Y U]h a Y]V]Z b]Yk žcf a g ]b XYU] " h Y  
5h ]b] @\byf h Ycfm]Z b]Yk žcf a gk Ug] Y h]b]YX Vrh 'A ]h] Y O]c] žcf a g žcf V]b] [ fi YbW  
g V] fci dg  $\Gamma_1(n)$  UbX W]a d' Y]YX Vrh Y g]M]b]X U h cf O]c] žcf a g žcf U' V]b] [ fi YbW  
g V] fci dg cZ  $SL_2(\mathbb{Z})$  " h Y b]Yk žcf a h Ycfm]b]U] fU' m]YX hc U hca cfd\ ]M]zfa g UbX U !  
hca cfd\ ]M]Ydf]Yg]b]h]cbg žcf  $GL_2$  ]b h Y UKY ]V]g]h]b] ž UbX ]h] Y]ZcfY \ Ug \ UK U ž!  
fYU]b] [ ]a d]U] ]b h Y h Ycfm]Z U hca cfd\ ]M]zfa g' hc XU]ž fYg]U]W]Yf]g \ Ug Y V]Yb  
Yi h]b]X]b] h Y]f ]X]U]g hc gh Xmb]Yk žcf a g žcf cf]h c] cbU [ fci dg' h Y 5h ]b] @\byf cd!  
Y]U]cf]g]b]fcXi WX ]b h Y]f d]U]Yf O]U]g: d' U]U] ž bX]a Yb]U fc Y ]b h Y gh XmcZY " d]h]W  
UbX G ]a i fUa cXi `Uf žcf a g'

@\byf YU]b]YX \ ]g 6G]h]BYk Mf\_ I b] Y]g]h]m]f' , ž UbX \ ]g A5 f' - ž UbX D 8 f' (% ž  
Uh] Y I b] Y]g]h]m]Z d]Yb]g]r]j Ub]U]i bXYf h Y g d]Y] ]g]cb cZ <Ug FUKYa UWYž k\ ca \ Y  
k Ug `UHY hc XYg]M]Y Ug \ ]g]YU]Yf UbX Z]YbX' @\byf k Ug h Y \* h cZ FUKYa UWYž &%  
Xc]M]fU gh XYb]g] UbX h Y h ]fX U h cf cZH ]g cV]h Ufm]g h Y g]M]b]X cZ @\byf]g] žci f  
Xc]M]fU gh XYb]g]

@\byf V] [ Ub \ ]g U]M]KYa ]M]M]Yf Ug]b ]b]g]fi V]f Uh7cfbY~ ]b % (% ( ' " ž % ( ' ž \ Y  
'e]b]YX ?Y~Yi 7cfdcfU]cbž k\ ]W k Ug ]b]j c]j YX k]h h Y XYg] b UbX ]b]h]U cd]YU]cb cZH Y  
& ) X]Z] g]cb d' Ub]h]CU\_ F]X] Y f]a Ub \ U]U]b D]c' VM' < ]g [ fci d]ž k\ ]W ]b]V]YX A]U]g]cb  
6]b]YX ]M]UbX 9' ]ch]Acb]fc~ ž XYf Ycd]YX U \ ] \ n]U]j Ub]W]X a U]h Ya U]h]W h Ycfm]Z \ ck U  
W]g]M]KY cZ U]d]fci ]a U]Ym]zi f h ci g]b]X g]U] Yg]kci `X fYg]cb]X hc h]a Y! X]Yd]Yb]X]Yb]h]X]g]  
h] fV]Ub]W]g]b ]g]d]Y]Zcf a Ub]W] k \ Yh Yf U]W]g]M]KY kci `X a U] [ b]ž]h] YX]g]h] fV]Ub]W]ž YUK]b]  
i `h]a U]Yn]tc UX]g]fi d]h] Y cf XYg]fi M]j Y g] f [ Y ]b d]Y]g]g] f]ž cf k \ Yh Yf h Y W]g]M]KY kci `X  
X]U]a d ci h]h Yg] Zi V] U]h]cbg Ug ]h]k Yb]h] fci [ \ g] W]g]g] Y g]U] Yg] @\byf UbX Acb]fc~  
k YfY h Y d]f]b] ]U a U]h Ya U]h]W]U]g]k \ c V]b]g]Vei Yb]h]ng]c]j YX g]g]h]a g cZ ]h]a Y UbX g]U]W  
X]Yd]Yb]X]Yb]h]U] X]Z]Y]Yb]h]U] Yei U]h]cbg]ž k\ ]W `YX hc Ub YZ] ]V]b]h]a Yh cX žcf d]fcXi V]b]  
I ! & ) Uh]U]b]Yk m]M]b]g]fi W]YX d' Ub]h]CU\_ F]X] Y' : cf ž f]h Yf ]b]žcf a U]cb U]ci h]V]b]  
h]M]i h]cbg]a UKY Vm @\byf ž bi W]U]f Yb] ]b]Y]f A]U]g]cb 6]b]YX ]M]f]V]M]d]Yb]h]cZH Y BU]cb]U  
A]YXU cZ G] ]V]W] ]b % +) ž UbX h Y]f [ fci d]ž V]b]g] `h]Ub ]b]žcf a U]j Y ]b]Y]f ]Yk k]h 6]b]Y!

XJMGQ 5ZYf H fYy nUfgz @AbYf `Yzh?Y`YI hc VWa Y \ YUK cZHY a UA Ya UjMj[ fci d Uh<nXfcWfVcb FYgUfW :bW

@AbYf fYhi fbYX VjYzntc UAKYa ]UgUb 5ggcVjUy DfcZyggcf UhA YI bJ YfgjmcZDfbb! gnj Ub]U ]b % (-i%) &ž VZcfY ^c]b]b[ @cg 5`Ua cg G]Vb]Z]V@UcfUcfmžcf Zj Y nUfgz Zc`ckYX Vntkc UXX]cbU nUfg Uj UWbgj `huh' 5h@cg 5`Ua cgž \Y ž fH Yf kcf\_YX cb H Y AUb\UhU Dfc`VnžXYj Ycd]b[ H Ycf]YgcZx]Zi gjcb WbMkYgUbX bYi Hfcb HfUbgdcfH' :b %) +ž \Y fYhi fbYX hc UAKYa ]Mdi fg ]hg hc VWa Y DfcZyggcf UhA]W] Ub GUHY I b] j Yfgjmcžcf gj nUfgk\]WkYfY Zc`ckYX Vnb]bY nUfgUhA YI bJ YfgjmcZAUfn`UbX" <]g `Ughdcg]cb kUgUgAY`cb DfcZyggcf UhA YI bJ YfgjmcZD]hgMi f[\ žca % +&hc % , \$"

@AbYf di V]g\YX Hkc Vcc\_g Ubž UMMfX]b[ hc AUH G]BYž UhcU cz \* + fYgUfW dU dYfgk]H žj YUf]b[ žca \]gkcf\_ ]b XYZfgy' : i fH Yfa cfYž \Y di V]g\YX % dfcVYa g UbX#cf gc`i Hcbg]b H Y American Mathematical Monthly" :bW X]b[ 5h]bž @AbYf \UK %& WU H cfžk]H AUj ]b ?bcdd UbX Acff]gBYka Ub V]b[ \]ga cghžYei YbhW`UcfUcfg'

6ZcfY a Yf]b[ :cgvd`ňj žH Yž @AbYfňj a cH Yf FUWY \UK VYb a Uff]YX hc GJa i Y FubdcfhfUWfYj ]UHX žca H Ycf] ]bU FubdUbcfHž[ ] ]b[ V]fH hc žj YW]XfYb VZcfY\Yf \i g]UbX X]YX" GAYH Yb a Uff]YX :eYňj žH Yž k\c \UK \UK žj YW]XfYb Vm\]gdfY]ci g a Uff]U`Y` H Y žLa ]ntH Yb a cj YX hc AUggUMi g]Hgj` H Yf ž]fghW]X kUg Vcfb Uh\ca Y UbX gpcb X]YX" K]H \Yf g]Mbx dfY[ bUbVb\ Yf gjYf ZcfWX \Yf hc fYhi fb hc BYk Mf\_ 7]mte \Uj Y \Yf VUmlhU\cg]U/ H ]g VUmkUg :eY @AbYf" : cf \Yf H ]fX UbX `Ugh dfY[ bUbVb:eYňj a cH Yf U[ U]b WcgY hc \Uj YH YV]fH Uh\ca Yž UbX H YVUmlX]YX" K\Yb :eY kUg H fYy nUfgc`Xž \]g dUfYb]gXj cfWž UbX \Y UbX \]g žLa ]ma cj YX VUW] hc BYk Mf\_ " 5gUH YbU[ Yf ]b BYk Mf\_ 7]mā \Yvi ]hufUk]cz dUf]M]UHX cb H YXVUHYHUb ]b \] \] g]Mccž UbX \Y dYX cbY cz \]g \UZ Vfch Yfg]b \]g `Uk cZ]Mž gca Yf]a Yg UbdUf]b[ ]b Wf fh]b d`UW cz \]g \UZ Vfch Yf" @AbYf [ fUKi UHX žca \] \] g]Mcc` ]b % & , UhA Y U[ Y cz % ) " 5ZYf Ug\cfhg]hUhUb Yi dY]a YbU W`Y[ Y ]b K ]g]Mbg]bž \Y fYhi fbYX \ca Y hc KU\_Y Wf fg]g]b a UA Ya UjMjUbX g]VbWUhBYk Mf\_ I bJ YfgjmfBNI`E`K\]YXc]b[ gcž \Y cVU]bYX Udcg]cb \_Yd]b[ fWfXg UhAUMňj k\]W kUg hc `UghUci hg]Y Yb nUfg' Si Yhc H Y8YdfYgg]cbž \Y`cgh ]g`cVUhAUMňjVi hYj Ybhi U`m]bXYX Udcg]cb cb UK D5 dfc`Vnž k f]b[ \]g ž]fghdi V]g\YX dUfYž i DfcXi W]cbž 9a d`cna Ybž UbX DfcXi W]j ]m]b ) + G]VW]X :bXi gf]Ygj H ]g dfc`Vnžcc\_ \]a hc D.]UKY d\]U ]b % ' \* ž k\YfY \Y hcc\_ Wf fg]g UhA YI bJ YfgjmcZDfbbgnj Ub]UH UhWf `X VY HfUbgžYfYX hc BNIž žca k\]W \Y YUfYX U6G]b % ' , " @AbYf a Yh\]g ž hi fY k]Zž AUfm6Yi Wž ]b H Y I bJ YfgjmcZ Dfbbgnj Ub]U]VfUfnäk \YfY g]Y kcf\_YX Uj UK D5 dfccžYUKYf' H Yma Uff]YX cb Si [i gh %ž % ' , UbX \UK \*) nUfg hc[ YH Yf' AUfnňj YX]cf]U kcf\_ Wb]bi YX ]b \Yd]b[ :eY dfYdUfY \]g Hkc Vcc\_g' H Ym\ UK cbY XU [\HYž N Y]bXž bYy :bYH'

FYZfYbWg

005"C"@5h]b UbX >'@AbYfž Hecke operators on  $\Gamma_0(m)$ ž AUA "5bb"% ) f% +\$ž% (i % \$'

00A" 6bYX]Mž Interview with Center for Oral Historyž Ubi Ufn&(ž% - %ž 7\ Ya ]W <Yf! ]U[ Y : ci bXU]cbž D.]UKY d\]U'

00J' @AbYfž Discontinuous Groups and Automorphic Functionsž AUA Ya UjW G fj Yngž Bc'J =ž 5a Yf]Mb AUA Ya UjW Gc]V]mžDfcj ]YbWžF-ž% \* ("

00K'i 7"K"@ž Newforms and functional equationsž AUA "5bb"&?& f% +) ž & , )i' %& " 00H'A]h]Yž On automorphic forms on  $GL_2$  and Hecke operatorsž 5bb"AUA "- ( f% +%ž %+(i% - "