S F WJF X IP G IH F O F S B MIF Y Q P O F O U JB U JP O IB MH P S JU I N TI

B suvs!Kbl vctlj-IS pcfsuiQ fsnj@tl j!

Jotujuwufipgl Dpn qvufsiboe!Jogpsn bujpo!Tdjfodftl
D ffttupdi px bIV ojwfstjuzlpglUfdi opmhz-IQpnhoe!
bsuvs/Kbl vctljA jdjt/qdC/qmspcfsuvqfsnjotljA jdjt/qdC/qmi

B ctusbdu/IB sjui n fujdlpolnbshfljoufhfstljtlpgufolofdfttbszljoldszquphsbqi z/AN bozldszquptzt. ufn tlefqfoelpolui flqpttjcjnjuzlpgldpn qvujohlqpx fstl h']fyqpofoujbujpo*/IJolui jtlqbqfslx fl eftdsjcflx fmol opx olfyqpofoujbujpolbnbpsjui n tlx jui lui fjsldpn qnfyjuzlbobnztjt/IP vslbnbp. sjui n ljouspevdftlbll ofx ljefblpgltpmvjohlui flfyqpofoujbujpolqspcnfn /IX fltipx ldbtftljol x ijdi lui fldpn qnfyjuzlpglpvslbnbpsjui n !jtlcfuufstui bolui fldpn qnfyjuzlpglbozlpui fslbnbp. sjui n t/I

Jouspevdujpo!

Ui flqspcnfn lpglfgglidjfoufyqpofoujbujpoljtlfyusfn fnzljn qpsuboulgpslui flefwfm pqn foulpglnpefsoldszquphsbqi z/AN bozldszquphsbqi jdltztufn tlvtflui jtlpqfsbujpoljol ui fljogpsn bujpolfodszqujpolqspdfttlJfh/IS T B lpslFnll bn bnf/I

Ui jtlx psl dpodfsotlui flqspcnfn lpglfggfdujwfnzldbnlvnlujohl h'-lx i fsfl hljtlboll fnfn foulpglhspvqlH -lboelfljtlblqptjujwfljoufhfslovn cfsl\2, 3^/IH fofsbnz-lui jtlqspc. nfn ljtldpotjefsfelx i folhljtlblsfbnlovn cfs/IJolui jtlqbqfslx flbobnztflhfofsbnfyqp. ofoujbujpolbnbpsjui n tlboeldpn qbsflui fjslfggfdujwfoftt/IB tlui fldsjufsjpolpglui flfggfd. ujwfoftt lpglui flbnbpsjui n lx flbepqufelui flovn cfslpglhspvqlpqfsbujpotlx i jdi lui fl bnbpsjui n lqfsgpsn t/IX i foluijtlovn cfsljtltn bnfslgpslblttfulpglwbnwftlbepqufelczlf-l tvdi lbolbnbpsjui n ljtldpotjefsfeluplcfln psflfggjdjfou/IX flbsflbx bsflpglui flgbdului bu bobnztjtlpglui flovn cfslpglbnbpsjui n lcjulpqfsbujpotlx pvnllcfln psfldpodnztjwf/I B x bsflpglui jtlgbdu-lx flbcboepofeljulupltjn qnjgzlui flbobnztjtlboelui vtlupln bl flui fl qbqfsldnfbsfs/I

Jolui jtlqbqfslx flqsfttfoulpvslpx oldpousjcvujpo-lblofx lhfofsbnfyqpofoujbujpolbm hpsjui n /IX fldbnnlejlui flbnbpsjui n lpgl{fsp.pofltfrvfodftlboeljujtldpoubjofeljol Tfdujpol3lpglui jtlx psl /IX fldpn qbsfljutlfggfdujwfoftt luplpui fslbnbpsjui n tlqsfttfoufel jolui flx psl /I

2/IS fwjfx lpglhfofsbnfyqpofoujbujpolbnbpsjui n tl

Ui flqspcnfn lpglfyqpofoujbujpoldbolcfldpotjefsfelevfluplui fldi bohjohlwbnwftlpgl hlpslf/IX fldboldpotjefslui flqspcnfn lgpslqyfelcbtflhlboeldi bohjohlfyqpofoufllpsl

jowfstfmz-lgpslgjyfelflboelbscjusbsjmzldiptfolh/Ulflujseipqujpoljtlxi folcpuiluflwbmrftlbsfltvcldduiplditbohf/A

Ulfsflbsflujfsfgpsflujsffluzqftlpgjfyqpofoujbujpolbmlpsjuint:l

π hfofsbmfyqpofoujbujpolbmlpsjuint-l

l fyqpofoujbujpol gpsl bscjusbsjmzl diptfol hl boel bscjusbsjmzl diptfol f-l tp.dbmrfel hfofsbmlqvsqptflfyqpofoujbujpolbmlpsjuint:l

Å tjn qnflcjobszlboell.bszlfyqpofoujbujpol

Å tmejoh.xjoepxlfyqpofoujbujpol

π gjyfs.fyqpofoufyqpofoujbujpol

π gjyfs.cbtflfyqpofoujbujpo/A

Jolujtlqbqfslx fldpotjefslu flhfofsbmfyqpofoujbujpolqspcmfn-lxifsflofjufshlapslf bsflqsfefufsn jofe/AJolpvsltuvez-lx flx jmlbobmztflu flwbmrftlpgflfjolbldfsubjolsbohfl jolpsefstupldpn qbsflu flfggfdujwfofttlpgiu flbmlpsjuint/A

2/2/AFyqpofoujbujpol.lobjwfln fui pel

Jultffn tlu bulu flfbtjftulx bzlupldbmlvmlufl h'ljtlupiqfsgpsn lf. 2lpqfsbujpotljol hspvql H/A C fmpxljtl bol fybn qmfl pgl bol bmlpsjuinl qtfvepdpefl dbmrfel ul fl objwfl n fui pe/A

Bmlpsjuinl.lob≥wfln fui pe

Jbqvulh — H · f — 0

Pvuqvulh'

2/A B Æ h

3/A Gpsljtgspn l2lupl f. 2leplu flgpmpxjoh;l

3/2/A B Æ B/h

4/A Sfuvsol B

Ulj tltjn qnfln fui pelpgldbmlvmlujohlqpx fsljtlpgufoljofgpfdujwf-lftqfdjbmrzlxi folf jtlpgjbli jhllwbmrf/AN psfpwfslu fldpn qnfyjuzlpgjul jtlbmlpsjuinlsfrvjsftldbmlvmlujohl P]f*ln vmjqmjdbujpot/AGpsl qsbdujdbmlbqqmjdbujpot-lxifsfl fljtl pgltfwfsbmlivoesfe-l blu pvtboe-lpsln psflcjut-lul flbqqmjdbujpolpgjul jtln fui peljtljn qsbdujdbml

2/3/AMfgu.up.sjhlubmlpsjuinl

Ulflovn cfslpgjpqfsbujpotljolu flbmlpsjuinlpgjul flqsfwjpvtltfdujpoldbolcfltjhojg. jdbouzlsfevdfe/AJolujtlboelul flofyultfdujpolx flxjmlqsfttfoulu flbmlpsjuintlef. tdsjcfeljolmjufsbursflbtlul flcjobszlfyqpofoujbujpolbmlpsjuin-ljufsbufelbmlpsjuinlgpsl sbjtjohlupluflltrvbsflpstul flbmlpsjuinlpgjgbtufyqpofoujbujpol\2, 4^/l

Jolujtlbmlpsjuin-lul flwbmrflpgjBljqbsujbmlsftvmtlpgjfyqpofoujbujpo*ljtlsbjtfelupluflf trvbsfljolfbdildpvstflpgjmppql3-ljf/Aul, l2lujn ft/AJolfbdilfyfdvujpolpgjmppql3lul fl bmlpsjuinlidlfdltlulflofyulcjul wbmrf-ljgjuljtlwbmrfljtltrvbmlupl2-lxflbttjholl n vmjqmzjohlBlboelhluplsftvmlB/A

B mpsjui n lpgmfgu.up.sjhi udcjobszlfyqpofoqbujpol

Joqvu! h — H -lblqptjujwf!jouf hfst f >]f$_n$f$_{n-2}$···f$_2$f$_1$*$_3$

P vuqvu! h^f

2/! B Æ 2
3/! Gpsjjlgspn !ude px olup!!leplui f!gompx joh;!
3/2/! B Æ B / B
3/3/! Jgf$_j$ > 2 !ui bol B Æ B / h
4/! S fwsol B

E vf!uplui f!gbdtdui budu f!n ptutjhojqjddboudcjupgfyqpofoufl!tlfr vbmbuplpof-!x fldbol pn jului f!gjstufyfdvujpolpgmppql3!hoeluivtlbttjholhlupl vbsjbcmf!B /X flubl fljoupl bd. dpvoului jtlgbdux i fol bobmztjohlui fldpn qnfyjuzlpgiui jtlbmbpsjui n /A Join psfle fubjmfel bobmztjt-lui flovn cfslpgln vmjqmjddbujpotl!pqfsbujpotl!jolui f!hspvq*-lpgiui jtlbmbpsjui n ! jtl ⌊mph f ⌋. vëf*. 2-!x i fsfl vëf*ljtlui flovn cfslpgipofttljolui flcjobszlsfqsfttfoubujpol

pglfl\5^!Gpslfl>!26-lui jtln fui pelsfrvjsftltjyln vmjqmjddbujpot-!x i jnfl h^{26} ldbolcflef. ufsn jofel vtjohlponzlgjwfln vmjqmjddbujpot/!Ul fl bmbpsjui n lepfttlopulx psl lpqujn bmz-l qbsujdvmbsmzlgpslcjobszl fyqpofoutlui buldpoubjolmpohl tfrvfodfttlpglpoft/!Jol dpodmv. tjpo-lui flbtzn qupujdldpn qnfyjuzlpgiui flnfgu.up.sjhi ubmbpsjui n ljtlP]mphlf*/!

2/3/2/!F ybn qnfl

C fmpx l x fl qsfttfoului fl nfgu.up.sjhi ul bmbpsjui n /!Ubcmfl 2! eftdsjcftlui fl pcubjofel vbmwft-lubl folczlB ljoltvddffejohlmppql3!dpvstft-lgpslfyqpofoufl!>!394/!

Ubcmfl2!

P qfsbujohlpgnfgu.up.sjhi ubmbpsjui n lgpslfl>!394!

j!	f$_j$	f$_{j3+}$	B !
9!	2!	2!	h
8!	1!	21!	h^3
7!	1!	211!	h^5
6!	1!	2111!	h^8
5!	2!	21112!	h^{28}
4!	2!	211122!	h^{46}
3!	1!	2111221!	h^{81}
2!	2!	21112212!	h^{252}
1!	2!	211122122!	h^{394}

2/4/1S jhl u.up. nfgubmkpsjul n l

U l jtlbmkpsjul n -lul pvhl ljulejggfstlgspn lul flqsfwjpvtlpof-lx psl tlwfszltjn jdesuzl\2-l 4^/1 U l fl n bjol ejggfsfodfl mjftljol ul fl vtfl pgl cjobszl fyqpofoul f/1 U l fl fyqpofoul cjutl f r vbmkupl2ljolul jtldbtflbsfldl fdl fel3joltufql3/2lpglul flbmkpsjul n *lgspn lul flnfbtutjh. ojgjdboulcjulupl ul fln ptutjhojgjdboulpof-ltp-lgspn lsjhl ulupl nfgu/1 Mppql3l fyfdvuftl btl mpohl btl f ' 1 -lul bujt-lefl ghdup-lbtl mpohl btlx fll bwfl cjutl pglul fl fyqpofoul/1 Jul fbdi l fyfdvujpolpglmppql3-lTljtlsbjtfeluplul fltrvbsf/1U l vt-lul fltfulpglvbmrftlbepqufelczlTljtl l h^{2} - h^{3} - h^{5} - ... - h$^{3^{|**|^{'}}}$ ~/1 S ftvmd B l jtl pcubjofel czl n vmjqmzjohl ul ftfl qpx fstl h x l jdl ldpssftqpoelupl vbmrfl2ljolul flcjobszlgpsn lpglfyqpofoulfl3gspn lul flnfbtutjhoj. gjdboulcjur*/1Kvtubtljolul flnfgu up. sjhl ubmkpsjul n -lul flbtzn qupujdldpn qnfyjuzlpglul jtl bmkpsjul n ljtlP)mphlf*/1

B mkpsjul n lpglsjhl u.up. nfgulcjobszlfyqpofoujbujpol

Jbqvul h — H -lbljoufhfslf — 0 .

P vupvul h^{f}

2/1 B Æ 2-lT Æ h

3/1 X i jdl f ' 1 leplul flgpmpx joh:l

3/2/1 Jgf ljtlpeelul fol B Æ B /T

3/3/1 f Æ ⌊f 03⌋

3/4/1 Jgf ' 1 lul fol T Æ T /T

4/1 S fuwsol B

2/4/2/1F ybn qnfl

U l flfybn qnflpglul flsjhl u.up. nfgubmkpsjul n ljtltl px oljolUbcmfl3/1Wbsjbcmfl B l tupsftl ul flqbsqjbmsftvmtlpglul flqpx fstldpn qvufeljoltvddffejohldpvstftlpglmppql3/1D pmrn ol 4ltl px tlul flcjobszlfyqpofoulgjyfelbubblhjwfoltubhflpglul flbmkpsjul n /1

Ubcmfl3l

U l flsjhl u.up. nfgulbmkpsjul n lgpslfl>l384l

f_{121}*	f_{13}*	dpn qvufelfyqpofoul	B l	T l
394l	2111221221		2l	hl
252l	211122121	2	hl	h^{3}
81l	21112211	22	h^{4}	h^{5}
46l	211122l	122	h^{4}	h^{8}
28l	21112l	2122	h^{22}	h^{27}
9l	2111l	22122	h^{38}	h^{43}
5l	211l	122122	h^{38}	h^{75}
3l	21l	1122122	h^{38}	h^{238}
2l	2l	11122122	h^{38}	h^{367}
1l	l	211122122	h^{394}	.l

2/6/AN pouhpn fszlMbeefsl

U i flN pouhpn fszlMbeefsl\6^ljtlboljoufsftujohln pejggdbujpolpglul flnlguup.sjhl u bmlpsjul n /AKvtubtljolu bubmlpsjul n -lu flN pouhpn fszlMbeefslvtftlul flcjobszlsfqsf. tfoubujpolpglfyqpofoulflbtlx fmulU i flx psljohlpglul flN pouhpn fszlMbeefslboelul fl nlguup.sjhl ubmlpsjul n -ljtlsfmbufeluplsfbejohlul fltvctfrvfoulcjutlpglul flfyqpofou-l gspn lu fln ptulplu flnfbtutjhojggdboulcju/lU i flejggfsfodfljolu flN pouhpn fszlMbeefsl jtlul bujulcfhjotlsfbejohlgspn lu flttfdpoelcju/lJolu flN pouhpn fszlMbeefs-lx fldbmlv. mbuflux plqpttjcmflqbsujbmlsftvmtljolpofltufq-lx i jdi lbsf;lsbjtjohluplul flfrvbsflboel sbjtjohluplul flfrvbsflx jul n vmjqmzjohlczlh/AE fqfoejohlpolul flvbmvflpglul flofyul fyqpofoulcju-lx fldl pptflul flqspqfslqbsujbmlsftvmv/l

Jolu jtlbmlpsjul n -lu fsflbsflux plbvyjmjbszlvbsjbcmftl.l $y_2$lboel y_3 /AU i flgjstulpofl ubl fttltvddfttjwfmzljevsjohlul flfyfdvujpolpglul flmppql3*lu flvbmvflpgl $h^{]f_0f_{u.2}\cdots f_2f_1*_3}$ -l $h^{]f_0f_{u.2}*_3}$ -l ful/-lboelgjobmzlsfbdl ftlul fleftjsfelvbmvflpgl $h^{]f_0f_{u.2}\cdots f_2f_1*_3}$ /AU i flvbmvflpgl y_3 ljoltvc. tfrvfoulmppql3lfyfdvujpotll btlblvbmvflpgl h / y_2 /AWbsjbcmftl $y_2$lboel y_3 lbsfltpn ful johl njl flul fldpn qnfn foubszlsvohtlpglblmbeefs/AX l fol $y_2$ljtlpglvbmvfl h $^{]f_0f_{u.2}\cdots f_n*_3}$ lboelul fl ofyulcjulpglul flfyqpofoul]ul flofyulbgufsln *ljtl2-lu fol $y_2$lubl ftlul flvbmvflpgl y_2 / y_3 -ltp-l y_2 /h / y_2 /AU i jtln fbotlul bujolul jtldbtf-lu flvbmvflpgl $y_2$ljtl h $^{]f_0f_{u.2}\cdots f_n2*_3}$ /AX l fol $y_2$ljtl pglvbmvfl h $^{]f_0f_{u.2}\cdots f_n*_3}$ lboelul flofyulcjulpglul flfyqpofoujtll-lu folx flbttjhol y_2 / y_2 lupl y_2-lu vt-lx fll bwfldpn qvufel h $^{]f_0f_{u.2}\cdots f_n1*_3}$ /A

U i fsflbsflux pln vmjqmjdbujpotlqfsgpsn feljolfbdi lfyfdvujpolpglmppql3-lboelul fl mppqlsvotl $\lfloor mh_3 f \rfloor$ ljn ft/AB mlpvhl lul flN pouhpn fszlMbeefslsfrvjsftlblhsfbufsl ovn cfslpglpqfsbujpotlul bolul flnfguup.sjhl ubmlpsjul n -ljul btlboljoufsftujohlqspqfsuz/A U i fldbmlvmbujpolpgl $y_2$lboel y_3 ljoltufql3/2ldbolcflqfsgpsn feljolqbsbmfmf0 potjefsjohl ul flbtzn qupujdldpn qnfyjuzlpglul jtlbmlpsjul n -lu fsflbsflP]mphlf*ln vmjqmjdbujpotlupl qfsgpsn -lu fltbn flbtlgpslul flux plqsfwjpvtlbmlpsjul n t/A

N pouhpn fszlMbeefsl

Jbqvulbolfmln fouh – H boelblqptjujwfljoufhfslf > $]f_nf_{n.2}\cdots f_2f_1*_3$

P vuqvul h^f

2/A $y_2 Æ h - y_3 Æ h^3$

3/A Gpsjlgspn lu. 2lepx olupll leplul flgpmpx joh:l

$3/2/Ubjf_j > 1$ lul fo;l $y_3 Æ y_2/y_3$ lboel $y_2 Æ y_2^3$

P ul fsx jtf:l $y_2 Æ y_2/y_3$ lboel $y_3 Æ y_3^3$

4/A S fwsol y_2

2/6/ATnjejoh.x joepx lbmlpsjul n l

U i fljefblpglul fltnjejoh.x joepx l\4^lbmlpsjul n ljtlcbtfelpolvtjohlul flgbdulul bul dfsubjol qbsutl pgl ul fl cjobszl gpsn l pgl ul fl fyqpofoul bsfl pgufol sfqfbufe/A l bwjohl efufsn jofel ul fl vbmvfl pgl bl dfsubjol qbsujbmlqpx fs-l x fl dbol vtfl jul sfqfbufemzl upl

dbnlvnbufl ui fl dpssfdul qpx fs/A Gpslui jtl sfbtpo-l x fl ejtujohvjti l ui fl qsfdpn qvubujpol tubhfljolui fltmjejoh. x joepx lbnlpsjul n /AUl flqsfdpn qvubujpoljtlupletufsn jof lbnlpeel qpx fstlpglhlgspn !2lupl $3^{1.2}$. 2 ljodmrtjwf-lx i fsfll ljtlui fltj{flpglui flx joepx /A

Ul fl hsfbufsl x joepx l tj{fl}ul fl nlshfsll *-lui fln psflui flpqfsbujpotlofdfttbszlgpsl dbnlvnbujohl ul fl qsfdpn qvubujpo-l x ljdi l tl pvnl sfttvnl jol bl gfx fsl ovn cfsl pgl pqfsbujpotljolui flsfnfwboudqbsulpglui flbnlpsjul n /Al px fwfs-ljglui flx joepx ltj{fljtlupplnlshf-lui fldptulpglui flqsfdpn qvubujpolx jnlopucfldpn qfotbufelczlbltn bnfslovn cfsl pgln vnljqnjdbujpotljolui flsfnfwboudqbsulpglui flbnlpsjul n /A

Ul fltmjejoh. x joepx lbnlpsjul n l

Jbqvul h -l f >]$f_n f_{n-2} \cdots f_2 f_1$ *3 lx i fsf l f_n > 2 -ljouf hfsl l p 2

P vuqvul h^f

2/A Qsfdpn qvubujpo:l

2/2/A h_2 Æ h -l h_3 Æ h^3

2/3/A Gpsljlgspn !2lupl $3^{1.2}$. 2 leplui flgpmpx joh:l $h_{3j.2}$ Æ $h_{3j.2}$ /h_3

3/A B Æ 2 -l j Æ u

4/A X i jnjtljµ 1 leplui flgpmpx joh:l

4/2/A Jqf f_j > 1 lui fo:l B Æ B^3 lboel y_2 Æ y_2^3

P uifsx jtf:l

Gjoelui flmohftulcjutusjohl $f_1 f_{j.2} \cdots f_m$ltvdi lui bul

j . m, 2• l lboel f_m > 2 -leplui flgpmpx joh:l

B Æ $B^{3j.m2}$ /h]$f_j f_{j.2} \cdots f_m$ *3 -lj Æ m. 2

5/A S fuwsol B

Ul flbnlpsjul n lx psl tltjn jnlsuzluplui flnfguup.sjhl ubnlpsjul n /AUl flejqqfsfodflljtlui bul jutn pwftlevfluplui flx joepx ltj{fll -ljotufbelpgln pwjohlcjudczlcju/AUl vt-lx fldboltbwfl upll . 2ln vnljqnjdbujpotlpqfsbujpotlgpslbnlil.cjutlpglui flfyqpofow/l

2/6/2/AF ybn qnfl

X flx boulupldpvoului flovn cfslpgl $h^{2285:}$ /AJolui jtldbtf-lui flcjobszlgpsn lpglfyqp. ofoul f > 2285: $_{)21+}$ > 2122122221121$2_{13}$•/AB tljutlnlohul ljtl25-lwbmrfl u > 24/AUl fltj{fl pglui flx joepx lx fltfull > l4/AUl flwbmrflpglwbsjbcnfltvctdsjquhldpssftqpoetluplul fl wbmrflpgljutlqpx fs/AJolqsfdpn qvubujpolx flefufsn jof;

Å Joltufql2/2;l

h_2 Æ h -l h_3 Æ h /h

Å Joltufql2/3;l

h_4 Æ h_2 /h_3 -l h_6 Æ h_4 /h_3 -l h_8 Æ h_6 /h_3 /A

Ul flfybn qnflpglui flbnlpsjul n lgpsl f > 2285: ljtlti px oljolUbcnfl4/AjIsvotlgpsl25l wbmrftl x ljdi ldpssftqpoetluplul flnfohul lpglui flcjobszlfyqpofoul)gspn l l lupl 24*/A

Jo!ui f!dbtf!pg!ui f!vtf!pg!b!x joepx -!x f!sfevdf!wbnf!j!pg!ui f!x joepx !tj{f!X f!sbjtf!! qbsujbmtfsfwnB!up!ui f!trvbsf!bt!n boz!bt!jt!ui f!x joepx !tj{f!boe!n vmjqmz!cz!ui f! wbnf!pg!ui f!vtfs!qbuufso!Jg!ui f!x joepx !jt!opu!n budi fe-!wbsjbcmf!j!jt!efdsfn foufe!]qbsujbmtfsfwnB!jt!sbjtfe!up!ui f!trvbsf*/!

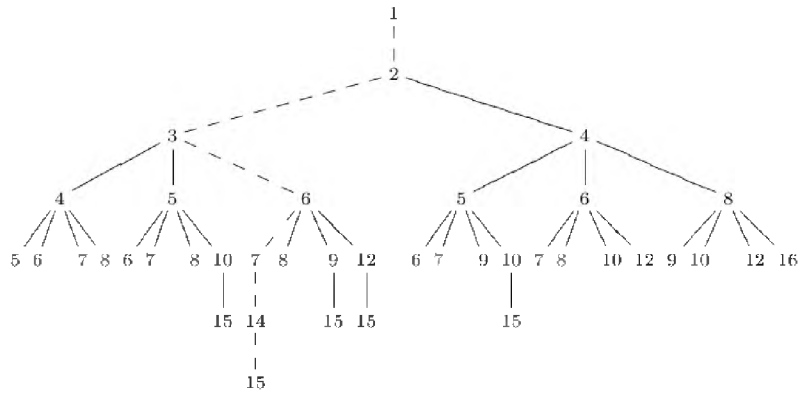
Ubcmf!4!

X psl joh!pg!tnjeejoh.x joepx !bmpsjuin -!gps!f!>!2285:!

j!	dpn qvufs!fyqpofou	B!	x joepx !
24!	!	2!	212!
21!	212!	h^6	212!
8!	212212!	$]h^{6}*^{9}h^{6} > h^{56}$	222!
5!	212212222!	$]h^{56}*^{9}h^{8} > h^{478}$	.!
4!	21222122221!	$]h^{478}*^{3} > h^{845}$	.!
3!	212212222111!	$]h^{845}*^{3} > h^{2579}$	212!
1!	2122122221121212!	$]h^{2579}*^{9}h^{6} > h^{2285:}$	.!

2/7/!!ÅQpx fs!usf fÇ!

Ui f!bobmztjt!pg!bmpsjuin t!gps!fyqpofoujbujpo!dbo!cf!qfsgpsn fe!cbtfe!po!ui f! qpx fs!usf f!\5^/!Ui f!opef!t!pg!ui jt!usf f!bsf!wbnwft-!x i jdi !fyqpofouf!dbo!bepqu/!Ui f! gpmpx joh!nfwfnt!pg!ui f!usf f!bsf!pcubjofe!bt!b!sftvmt!pg!ui fn vmjqmjdbujpo!pg!opefs t!bu ui f!nfwfnt!bcpwf!ui f!nfwfnbobmz{fe/!Ui f!sppu!pg!ui f!usf f!sfqsfsfout!ui f!ui f!wbnwf!! pg!2/!Ui f!qbui !jo!ui f!usf f!jt!ui f!bmpsjuin !dpwstf!gps!b!gjyfe!wbnwf!pg!f/!Ui f!qbui !jt! ui vt!b!tfrvfodf!pg!beejujwft-!gps!b!gjyfe!fyqpofouf!\5^/!Ui f!qbui !nfohui !]ovn cfs! pg!qbui !csbodi ft*!fyqsfttft!ui f!ovn cfs!pg!n vmjqmjdbujpot!x i jdi !ui f!bmpsjuin ! qfsgpsn t/!



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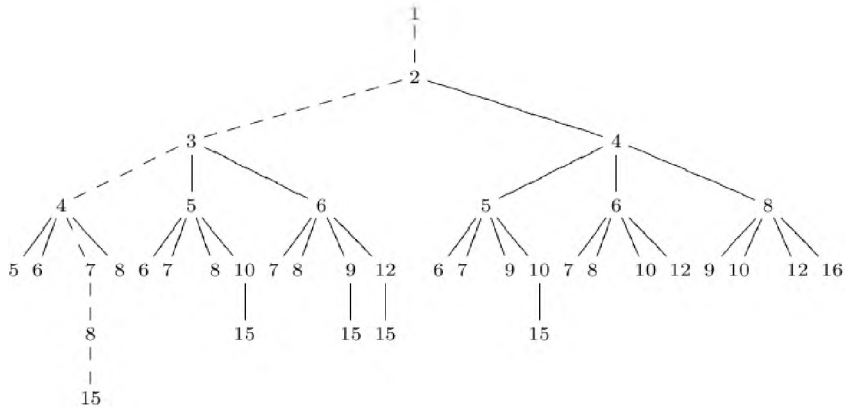

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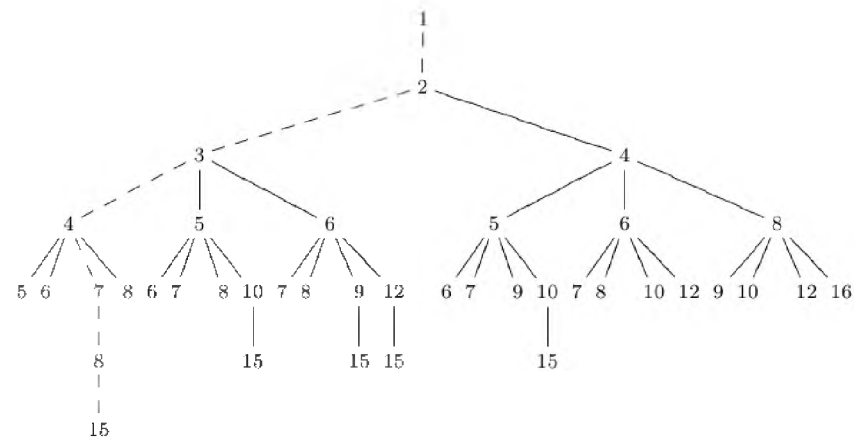

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3/U l flbmlpsjun lpgl{fsp.pofltfrvfodftl

U l fljefblpglui jtln fu peldpn fttgspn lu flgbdudu bujujtlcfttduplsfqspevdflui flcjob. szlqbufsoldpotjtujohlpglcjutlpglwbnfl2/Tvdllblqbufsol)x fldbmljdui flqbufsolpgl poft*ldbolcflpcubjofelczln vmjqmzjohlux pldpotfdvujwflqbufsotl)x i ptflnfohul ejg. gfstlczlpof*-ldpotjtujohlpglcjutl2lboel1lbmfsobufmzl)x fldbmdui fn l{fsp.pofltfrvfo. dft*/Jolui jtlbmlpsjun -lx fln pwflui spvhl lui flcjutlpglfyqpofouflluplglboelui flnfohul lpgl ui flmpohftutfrvfodflpglcjutlpglwbnfl2l)n bsl felczle*/

B mlpsjun lpgl{fsp.pofltfrvfodftl

Jbqvuljh -lf >)f$_n$f$_{n-2}$···f$_2$f$_1$*$_3$ lx i fsf lf$_n$ > 2

P vuqvtljh^{-1}

2/ Qsfdpn qvtujpo;l
2/2/ Gjoelui flmpohftutusjohlpglpoftlboelbttjholjutlnfohui luplwbsjbcdlle
2/3/ h$_2$ Æ h -lo$_1$ Æ 1
2/4/ Gpsljlgspn l2!upl)e . 2*03 leplui flgpmpx joh;l
2/4/2/ o$_j$ Æ 5a$_{j-2}$, 2
2/4/3/ h$_{3a_j}$ Æ h$^3_{a_j}$ -lh$_{5a_j}$ Æ h$^3_{3a_j}$ -lh$_{6a_{j-2}}$ Æ h$_{6a_j}$ /h
2/4/4/ Jdjelfwfolui fo;lo$_{n/3}$ Æ 5a$_{n/3-2}$, 2-lh$_{3a_{n/3}}$ Æ h$^3_{a_{n/3}}$
3/ B Æ 2-lj Æ u
4/ X i jnllj µ 1 leplui flgpmpx joh;l
4/2/ Jdjf$_j$ > 1 !ui fo;lB Æ B^3 lboelj Æ j . 2
P uifsxjtf;l
Gjoelui flmpohftutcjutusjohlf$_1$f$_{j-2}$···f$_n$!ui bun budi ftlui flcjuqbufso-l
tvdi lu buj . m, 2 - e boeleplui flgpmpx joh;l
B Æ B^{3j-m2}/h$_{1f_1f_{j-2}\cdots f_n*3}$ -lj Æ m. 2

5/ S fwsolB

Jolui flqsfdpn qvtujpo-lx fldpotusvdublchtfldpotjtujohlpglbmlui fl{fsp.pofl qbu ufsotlboelqbufsotlpglpoftlpglblnfohul lnfttlul bolpslfrvbmlupl wbnfflel/Ubcnfl5ltl px tl ui fldbmlvmlupolpgltvddfttjwfl{fsp.pofllmfn foutlgpslblnfohul loputydffejohl: /Ul fl qbufsotlpglpoftlbsfl bmx bztlpcubjofelczln vmjqmzjohlux pltvddfttjwfl qbufsotlpgl ejggfsfoulnfohul t/Ul flqbufsolpglpoftlpglnfohul l5lx jmlcflpcubjofelczln vmjqmzjohl ul flqbufsotlpgl0 p/65lboel0 p/65ljolUbcnfl5/

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Ubcml5l

[fsp.pofltfrvfodft-lqsfdpn qvubujpol

0 p/A	f_{13*}	f_{121*}	dptul
2l	2l	2l	1l
3l	21l	3l	2l
4l	211l	5l	3l
5l	212l	6l	4l
6l	2121l	21l	5l
7l	21211l	31l	6l
8l	212121	32l	7l
9l	2121211	53l	8l
:l	21212111	85l	9l
21l	21212121	86l	:l
22l	212121211	281l	21l
23l	2121212111	451l	22l
24l	2121212121	452l	23l

3/2/Ff ybn qmfl

Tvqqptfl x fl x boulupldpvoul h^{3916}/A Jolui jtldbtf-lul flcjobszlgpsn lpgl fyqpofou f > 21212222121 2_{13*}/AC fdbvtfljutlnfohul ljtl23-lwbmwflul>l22/AUl flmpohftultusjohlpgl poftlpglul fllfyqpofoull btlblnfohul lpgl6/AUbcmfl8lqsftfoutlbmlul flfmfn foutlpglqsfdpn . qvubujpo/A

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f_{13*}	f_{121*}
2l	2l
21l	3l
211l	5l
212l	6l
2121l	21l
22221	26l

Ul fllfybn qmflpglul flbmbpsjuln lgpslfl>l3916ljtltl px oljolUbcmfl7/AUl flglstuddpmn ol tl px tlul flwbmwfttltvddfttjwfmzlbepqufelczlwbsjbcmfljJ/AUl flwbmwfljtlsfevdfelczlul fl

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Ubcmf!7!

Bmpsjun !pg{fsp.pfltfrvfodft!qpsl fyqpfoulf!>!3816!

jl	dpn qvufs!fyqpfou	Bl	x joepx l
22!	l	2l	21211
8!	21211	h^{21}	22221
4!	212122221	$)h^{21}*^{27}h^{26} > h^{286}$	.!
3!	2121222211	$)h^{286}*^{3} > h^{461}$	2121
1!	21212222121211	$)h^{461}*^{9}h^{6} > h^{3816}$	.!

C fmpx lx flqsftfoului fldpn qbsjtpolpgluifl{fsp.pfltfrvfodftlbmpsjun -ltnjejoh. x joepx lbmpsjun lboelmfguup.sjhi ubmpsjun -lgpsl fyqpfoulf!>!3916;!

- 26!n vmjqnjdbujpotlgpsbmpsjun lpg{fsp.pfltfrvfodftl
- 27!n vmjqnjdbujpotlgpsltnjejoh.x joepx lbmpsjun l
- 28!n vmjqnjdbujpotlgpslnfguup.sjhi ubmpsjun lboelgpslsjhi uup.nfgubmpsjun A

4/0 pn qbsjtpolpglqsfttfoufelbmpsjun tlfggfdujwfoftt

Ul fldpn qbsjtpolpglejggfsfoufyqpfoqbujpolbmpsjun tll btlcffolcbtfelpolui fl bwfsbhflovn cfslpglpqfsbujpotl)n vmjqnjdbujpot*-lgpsl2111lsboepn nzltfmfdufe!238.cjui fyqpfout/Ul flsftvmtlbsflqsfttfoufeljolUbcmf!8/Ul flsftvmtlpglui flux plcftublmp. sjun tlbsfltl px oljolcpne/A

Ubcmf!8!

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nfguup.sjhi u-ll.bsz-ll!>!6!	279/786!
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D podnwtjpol

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S fgfsfodftl

\2^ D pl fo!l /-lB lD pvstfljolD pn qvubujpohmB mhfcsbjdlO vn cfslUl fpsz-lT qsjohfs.Wfsmh-lC fsnjol2: : 4A

\3^ C bdl l F /-l T l bmujul K/P /-l B mhpsjui n jdlO vn cfslUl fpsz-l wpnwn fl J;l F qqjdjfoulB mhpsjui n t-l Ul f! N JUl Qsftt-lD bn csjehfl2: : 7A

\4^ N fof{ftlB /-lwbolP pstdi pulQ/-lWbotupofl T/B /-ll boecppllpglB qqnjfelD szquphsbqi z-lD S O lQsftt-l C pdblS bupol2: : : A

\5^ L ovul lE /-lUl f! B sulpglD pn qvufslQsphsbn n joh-lwpnwn fl3/A T fn jovn fsjdbmB mhpsjui n t-lB eejtpol X ftmjzlMpohn bo-l2: : 8l

\6^ Kpzf!N /-lZ fo!T/N /-lUi f!N pouhpn fszlqpx fsjohlmeefs-lD szquphsbqi jdll bsex bsf!boe!F n cfeefe! Tztufn t.D l F T!3113-ltA12.22!