
Theses, Dissertations, and Other Capstone Projects

2012

Effective Pedometer Programs: Determining the Motivational Factors Primarily Responsible for the Physical Activity Increases being made by Participants

Britne Engelking

Minnesota State University - Mankato

Follow this and additional works at: <http://cornerstone.lib.mnsu.edu/etds>

 Part of the [Community Health and Preventive Medicine Commons](#), and the [Public Health Education and Promotion Commons](#)

Recommended Citation

Engelking, Britne, "Effective Pedometer Programs: Determining the Motivational Factors Primarily Responsible for the Physical Activity Increases being made by Participants" (2012). *Theses, Dissertations, and Other Capstone Projects*. Paper 226.

This Thesis is brought to you for free and open access by Cornerstone: A Collection of Scholarly and Creative Works for Minnesota State University, Mankato. It has been accepted for inclusion in Theses, Dissertations, and Other Capstone Projects by an authorized administrator of Cornerstone: A Collection of Scholarly and Creative Works for Minnesota State University, Mankato.

Ghgevkxg'Rgf qo gvt 'Rtqi tco u'F gvtgto kplpi 'yj g'O qkxcvkppcn'Hcevqtu'Rtlo ctkn{ 'T gur qpukdrg"

hqt'yj g'Rj { ulecn'Cevkxk{ 'Kpetgcugu'dgkpi 'o cf g'd{ 'Rct vkr cpw0"

D{ "

Dtkpg'Gpi gmki "

C'Vj guku'qt 'F kuigtvckqp'Uwdo kvgf 'kp'Rct vkn'Hwtkmo gpv'qh'yj g"

Tgs wktgo gpw'hqt'yj g'F gi tgg'qh"

O cuvgtu'qh'Uekpeg"

K"

Uej qqn'J gcmj "

O kppguqv'Ucvg'Wpkxgtukv{ . 'O cpnevq"

O cpnevq. 'O kppguqv"

Lwn{ . "4234"

Ghgevxg'Rgf qo gvg'Rtqi tco u<F gvgto kłpi 'vj g'O qvxcvłpcn'Hcevqtu'Rtko ctkł{Tgur qpukdrg'hqt"
vj g'Rj {ulecniCevxkł{ "łpetgcugu"dgłpi 'o cf g'd{ "vj g'Rctvėkr cpvu"

D{ "Dtkpg"Gpi gmłpi "

Vj ku'vj guku'j cu'dggp"gzco kłgf "cpf "crr tqxgf "d{ 'vj g'hqmıy kłpi 'o go dgtu'qh'vj g'vj guku'eqo o kvgg0'

F t0O cti g'O wtc{/F cxku."Cf xkuqt"

F t0Cwwop"J co kłqp"

F t0Uj gtt{ 'Hınuqo /O ggm'

vj tgg'y ggmi"qh'eqo r gkxg'lpegpvkg'y kj kp'y g'gzr gto gpvni tqwr 0""P q'uki pkecpv'f khtgpegu"
y gtg'hqwpf "dgy ggp'y g'v'r gu"qh'eqo r gkxg'cf o kpvgtgf "qt"dgy ggp'y g'i tqwr u'y j gp'uo cm'
cdkx' i tqwr u'y gtg'wugf "cu'c'eqo r gkxg'lpegpvkg0

Vcdng'qh'Eqpvgpu"
"

Ej cr vgt'3''''

Kptqf wekqp(.....)B"

P ggf 'hqt'yj g'uwf { (.....)6"

Rwtr qug'qh'yj g'uwf { (.....)7"

Ucvgo gpv'qh'yj g'r tqdrgo (.....)7"

Tgugctej 's wguvkpu"q'dg"cpuy gtgf (.....)8"

Nko kcvkpu(.....)8"

F grko kcvkpu(.....) "

Cuuwo r vkpu(.....) "

F ghpkkqp'qh'Vgto u(.....)2"

Uwo o ct { (.....)3"

Ej cr vgt'4<Nkgtcwtg'Tgxlgv (.....)5''''''''

Kptqf wekqp(.....)5"

Cp'ghgevkxg'r gf qo gvt'r tqi tco <Uqekri'eqo r ctkuqpu'y kj qw'kpegpvkxgu'(.....)5"

Ghgevkxg'r gf qo gvt'r tqi tco u<Uqekri'eqo r ctkuqpu'y kj 'kpegpvkxgu'(.....)7"

''''''''''Vj g'tkum'qh'vpf guktgf 'dgj cxkqtu'y j gp'qhhtkpi 'kpegpvkxgu'(.....)7"

''''''''''Vj g'ghgevkxgpgu'qh'r gf qo gvt'r tqi tco u<C'o gvc/cpcn{uku'(.....)8"

Eqo r gvkkxg'Vj gqt { 'cpf 'uqekri'eqo r ctkuqp<Vj g'ghgev'qp'o qvxcvkqp(.....): "

''''''''''Vj g'N/ghgevk'Uwf { 'f gvcku'cpf 'tguwuu(.....): "

''''''''''Kpvt/i tqwr 'eqo r gvkkqp<C'o gvc/cpcn{uku'(.....)43"

''''''''''Vj g'ghgev'qh'kpvgtf gr gpf gpeg'qp'kpf kxf wcn'o qvxcvkqp(.....)47"

Eqpxgtvpi 'r gf qo gvt'uvgr u'kpq'r j { ulecn'cevkxk{ 'rgxgu(.....)48"

Uwo o ct {4: "

Ej cr vgt "5<"O gyj qf u.....53""

Kvtqf wekqp.....53"

Tgugctej 'f guki p'.....53"

.....I tqwr 'r ncego gpv<"Gzr gtko gpvcriqt"eqpvtqr.....54"

Rctvlekr cvkqp'ugrgekqp.....55"

Kputwo gpvcvqp'.....55"

.....Rctvlekr cpvtgur qpukdkv{ "vq"ceewtcvgn{ 'o gcuwtg'uvgr u.....56"

F cvc"eqmgekqp'.....57"

Kvgtxgpvqpucf o kpvgtgf57"

.....Kvgtxgpvqp"qpg<"Eqo r gvklqpu'kp'uo cmfi tqwr u'qh'gs wcn'cdkdv{58"

.....Kvgtxgpvqp"vy q<"Kvgti tqwr "eqo r gvklqpu'.....59"

.....Kvgtxgpvqp"vj tgg<"Eqo r gvklqpu'kp"qpg'rti g'i tqwr "qh'xct { lpi "cdkdv{5: "

Kvgttrtgkpi "ceewo wrvgtf 'f cvc.....5: "

Uwo o ct {5: "

Ej cr vgt "6<"T guwmu'cpf 'F kuewukqp.....63""

Kvtqf wekqp.....63"

Rctvlekr cpw.....63"

T guwmu.....64"

F kuewukqp'.....69"

Uwo o ct {6: "

Ej cr vgt "7<"Eqpenwukqpu'cpf "Tgeqo o gpf cvkqpu'.....74""

Kvtqf wekqp'.....74"

Eqpenwukpu"76"

Tgeqo o gpf cvkpu"77"

"Tgeqo o gpf cvkpu'ht'ko r ngo gpwvkp"78"

"Tgeqo o gpf cvkpu'ht'r tqo qvkp"79"

"Tgeqo o gpf cvkpu'ht'htvj gt'tgugctej "7:"

Qdugtxcvkpu"7:"

Uwo o ct { "82"

Tghgtgpegu"84"

Ej cr vgt 'Qpg<Kpvt qf wevkqp''

I gwłpi 'tgi wrct'rj {ulecni'cevxkx\ 'ecp'tgf weg'vj g'tkum'qh'ces wtkłpi 'o cp{ 'qh'vj g' f kugcugu'r txcnrgpv'łp'vj g'Wpkłgf "Ucvgu'cf wv'r qr wv'vkqp'\qf c{ '*Wpkłgf "Ucvgu'F gr ctvo gpv' qh'J gcnj 'cpf 'J wo cp'Ugtxlegu']WUF J J U_.'422: =Y qtrf 'Ecpegt'Tgugctej 'Hwpf'cpf " Co gtlecp'Kpukwng'ht'Ecpegt'Tgugctej "]Y ETHICĲET_.'422; +0"Vj g'*Physical Activity Guidelines for Americans*'tgr qtvr tqxkf gu'utqpi "gxkf gpeg'vq'uwv r qt'vj cv'cf wmu'y j q'ctg" i gwłpi 'tgi wrct'rj {ulecni'cevxkx\ 'j cxg'c'ny gt'tkum'qh'f gxgnr łpi 'eqtqpct { 'j gct'v'f kugcug." j ki j "dmqf'r tguwtg.'v\rg/4'f kcdgvgu.'eqnp'ecpegt.'dtgcu'ecpegt'cpf 'o gvcdqk'uf pf tqo g' *WUF J J U.'422: +0"Hwtvj gt'łpf łpi u'łwi i guv'vj cv'c'f getgcug'łp'utqng'qewtgpeg'cpf łqt " rkngrj qqf 'qh'c'r tgo cwtg'f gcvj 'y gtg'gxkf gpv'łp'cf wmu'y j q'tgegkxgf 'tgi wrct'rj {ulecni' cevxkx\ '*WUF J J U.'422: +0"C'f kłqpcn'guko cvgu'uj qy 'vj cv'i nıdcn'ecpegt'tcvgu'eqwf 'dg' tgf wegf 'd{ 'qp'g/vj k'f 'łh'łpf k'kf wcu'tgegkxgf 'tgi wrct'rj {ulecni'cevxkx\ 'cpf 'cf qr vgf " j gcnj łgt'f łgv'r cwgtpu'*Y ETHICĲET_.'422; +0"J gcnj 'cf xqecvgu'j cxg'dggp'r tqo r vłpi " Co gtlecpu'v'gpi ci g'łp'vj g'tgeqo o gpf gf 'co qwpv'qh'rj {ulecni'cevxkx\ 'łp'c'xctłgv' 'qh' ugvłpi u.'uq'vj cv'łp'tgwtp.'vj g{ 'o c{ 'tgr 'vj g'cuuqekcvgf 'j gcnj 'dgpghku0''

F gur k'g'vj g'dgpghku'cuuqekcvgf 'y kj 'rj {ulecni'cevxkx\ .'pgctn\ '82'r gtegpv'qh'cf wmu' rıxłpi 'łp'vj g'Wpkłgf "Ucvgu'ctg'ukm'pqv'i gwłpi 'vj g'tgeqo o gpf gf 'f ckn\ 'rj {ulecni'cevxkx\ " *P cv'łqpcn'Egpvt'ht'J gcnj 'Ucv'v'ku']PEJ U_.'422: =WUF J J U.'422: +łpf 'cu'bo cp{ 'cu' wy q/vj k'f u'ctg'qdgug'qt'qxgty gli j v'*Hrgi cn'Ecttqm'Qi f gp'('Ewv'łp.'4232=" Y ETHICĲET_.'422; +0"Cu'c'tguwv.'vj g'Wpkłgf "Ucvgu'F gr ctvo gpv'qh'J gcnj 'cpf 'J wo cp' Ugtxlegu'*422: +t'ghqto cwgf 'vj gk'rj {ulecni'cevxkx\ 'i w'f grłpgu.'i kłłpi 'cf wmu'bo qtg'ej qlegu' qp'j qy 'rj {ulecni'cevxkx\ 'eqwf 'dg'cwłkpgf 0'

Kp"422: . 'y g"Physical Activity Guidelines for Americans'y gtg'tggzco kpgf "cpf 'k'
 y cu'f gyto kpgf 'y cv'y g'tgeqo o gpf gf "co qwpv'qh'r j { ukecn'cevxkv{ 'pggf gf 'vq'gpj cpeg'cp"
 kpf kxf wcnu'j gcnj "dg'ej cpi gf "Itqo "ōo qf gtcvg'r j { ukecn'cevxkv{ "hqt" 'c"o kpkō wo "qh'52"
 o kpwgu.'7'f c{u'gcej 'y ggn'qt'xki qtqwu/kpvgpukv{ 'cgtqdle'r j { ukecn'cevxkv{ "hqt" 'c"o kpkō wo "
 qh'42"o kpwgu.'5'f c{u'gcej 'y ggnō" *WUF J J U."422: 'r 07+'vq'ō372"o kpwgu'c'y ggnlkp"
 xctkqwu'y c{uō" *WUF J J U."422: 'r 07+0"Vj ku'ej cpi g'cmqy gf "cf wnu'vq'ej qqug'y j gp'cpf "
 j qy 'y g{ 'y gtg'i gwłpi 'r j { ukecn'cevxkv{ "cpf "cnuq"o cf g'kpeqtr qtcvłpi 'r j { ukecn'cevxkv{ "kpvq"
 yj gkt 'y ggm{ 'tqwkpgu'rguu'ej cngpi kpi 0"F gur kg'yj g'i wkf gkpg'ej cpi gu.'y g'r gtegpvcı g'qh'
 cf wnu'pqv'i gwłpi 'y g'tgeqo o gpf gf "co qwpv'qh'r j { ukecn'cevxkv{ "eqpvkpwgu'vq'eqpegtp"
 j gcnj "ectg'cf xqecygu'cetquu'yj g'Wpkvgf "Ucvgu" *P E J U."422: =WUF J J U."422: + "cpf 'y gtg"
 j cu'dggp'pq'gxf gpv'f getgcug'kp'yj g'co qwpv'qh'qdgug"qt"qxgty gki j v'cf wnu'tgukf kpi 'kp'yj g"
 Wpkvgf "Ucvgu" *Hgi cn'Ecttqm'Qi f gp"('Ewtłp."4232=P E J U."422: =WUF J J U."422: =
 Y ETHIC KET."422; +0""

Y kj 'kpcvxkv{ 'dglpi 'c"o clqt'eqpvtkdłpi 'hcevt'vq'yj g'co qwpv'qh'Co gtlkcpu'y j q"
 ctg'ewtgpw{ 'qdgug"qt"qxgty gki j v.'y g'Uwti gqp'I gpgtcn'j cu'o cf g'k'c'r tko ct { 'eqpegtp'hqt"
 cni'Co gtlkcpu'vq'vcng'cevkqp'kp'hki j vłpi 'qdgukv{ " *Wpkvgf "Ucvgu" F gr ctvo gpv'qh'J gcnj "cpf "
 J wo cp'Ugtxkegu"] WUF J J U."4232+0" Kp'yj g"Surgeon General's Vision for a Healthy and
 Fit Nation."Vj g'Uwti gqp'I gpgtcn'f guetkdgu'y c{u'kp'yj j ke j 'kpf kxf wcnu'ecp"j gr 'hki j v'yj g"
 v'gpf 'dglpi 'uggłpi 'tgnv'gf 'vq'yj g'co qwpv'qh'qdgug"qt"qxgty gki j v'Co gtlkcpu'yj cv'ctg"
 ewtgpw{ 'r qr wrcvłpi 'y g'Wpkvgf "Ucvgu" *WUF J J U."4232+<"

Qwt'pcvkqp"ucpf u'cv'c"etquutqcf 0"Vqf c{ ōu'gr kf go ke"qh'qxgty gki j v'cpf "qdgukv{ "
 " yj tgcvgpu'yj g'j kxqtke'r tqi tguu'yj g'j cxg"o cf g'kp'kpetgculpi "Co gtlkcpu's wcrkv{ "qh"
 " rłhgi Gxgt { 'qpg'qh'wu'j cu'cp'ko r qtcv'p'v'qrg'vq'r r c{ 'kp'yj g'r tgxgpvłqp'cpf "eqpv'qtqni"

" qh'qdguk{.'O qvj gtu.'hcvj gtu.'vgcej gtu.'dwukpguu'gzgewkxgu.'ej kf 'ectg"
 " r tqhguukqpcnu.'enpkekpcu.'r qrkkekpcu.'cpf 'i qxgtpo gpv'cpf 'eqo o wpkv{ 'hgcf gtu/y g"
 " o wuv'cm'eqo o k'vq'ej cpi gu'vj cv'r tqo qvg'vj g'j gcmj "cpf 'y gmpguu'qh'qwt'hc'o kkgu"
 " cpf 'c'eqo o wpkv{ 0*r 03+""

Vj g'Uwti gqp'I gpgtcr'eqpvkwgu'vq'f guetkdg'j qy 'kpf kxf wcu'ecp'ko r tqxg'vj g's wcrkv{ 'qh'
 vj gkt'rxgu.'cpf 'cf f kklqpcmf 'r tqo r vu'vj g'Co gtlecp'r wdrle'vq'vcng'cevkap<"

" Kco 'ecmkpi 'qp'cm'Co gtlecpu'vq'lqk'p'o g'kp'c'pcvqpcn'i tcutqqw'ghqt'v'vq'tgxgtug"
 " vj ku'tgpf i vj g'tgcn'i qcn'ku'pqv'lwuv'c'pwo dgt'qp'c'uecrg.'dw'qr vko cn'j gcmj 'hqt'cm'
 " Co gtlecpu'cv'gxgt { 'luci g'qh'hkg0'Vq'cej kxg'vj ku'i qcn'y g'o wuv'cm'y qtm'vqi gj gt"
 " vq'uj ctg'tguqwtegu.'gf wecvq'qwt'ekkl gpu'cpf 'r ctvpgt'y kj "dwukpguu'cpf 'i qxgtpo gpv'
 " hgcf gtu'vq'hkpf 'etgcvxg'uqmwkqpu'kp'qwt'pgki j dqtj qqf u.'vqy pu.'ekkgu'htqo 'eqcu'vq"
 " eqcu'vqi gj gt'y g'ecp'dgeqo g'c'pcvq'p'eqo o kwgf 'vq'dgeqo g'j gcmj { 'cpf 'hk0*r 0'
 " 3+""

Vj ku'tgr qtv'wui i guvgf 'vj cv'eqmcdqtcvxg'cpf 'kpf kxf wcn'ghqtu.'o cf g'd { 'cm'Co gtlecpu."
 y qwf 'dg'pggf gf 'kp'qtf gt'vq'tgf weg'vj g'r qr wcvq'qh'qdgug'qt'qxgty gki j v'cf wnu'tgukf kpi "
 kp'vj g'Wpkgf "Ucvgu0'kp'tgur qpug'vq'vj ku'tgr qtv.'cpf "qvj gtu'tghngekpi 'uko kct'wui i guvkqpu."
 j gcmj ectg'cf xqecvgu'j cxg'o cf g'tgf wekpi 'vj ku'r qr wcvq'p'c'r tko ct { 'eqpegtp0'

J gcmj ectg'cf xqecvgu'j cxg'wugf "c'xctkv{ 'qh'o gj qf u'vq'gpeqwtci g'Co gtlecpu'vq"
 dgeqo g'o qtg'r j { ukecm{ 'cevkg0'Ewtgpn'vgej pqmi kcn'cf xcpegu'j cxg'cmqy gf 'j gcmj ectg"
 cf xqecvgu'vj g'wug'qh'uqekn'o gf kc'qwwgw'vj tqwi j "qprkpg'u{ uvg'o u'qt'r tqi tco u0'Vj g'kpvgpv'
 qh'ko r ngo gpv'kpi 'vj gug'r tqi tco u'j cu'dggp'vq'kpetgcug'vj g'co qwpv'qh'r j { ukecn'cevkkv{ "
 dgkpi "gzgtvgf "d { 'vj g'wugt0'Vj gug'wugtu'qh'vj gug'r tqi tco u'qh'gp'vko gu'gzr gtlgpeg'c'ugtkgu"
 qh'kpvgtxgpvqpu'cpf 'i gpgtcm{ 'cmqy gf 'xkgy 'vj gkt'r j { ukecn'cevkkv{ "qwr wu'cmqpi 'y kj 'vj g"

r j { ulecn'cevxkv{ "qwr wu'qh'vj g'qvj gt 'wugtu'qh'vj g'r tqi tco 0"Qprkpg'uvgr /eqwv'kpi "

r tqi tco u'qt'ör gf qo gvtö'r tqi tco u'j cxg'dgeqo g'r qr wnt'co qpi 'lpf kxf wcu'cpf "

go r nq{ gtu'vj tqwi j qw'vj g'Wpkvgf "Ucvgu"*Dq { eg. "4233+0"C "r gf qo gvt 'ku'c'f gxleg'vj cv'ecp "

o gcuwtg'vj g'co qwpv'qh'uvgr u'vj cv'vj g'lpf kxf wcu'y gctkpi 'kv'j cu'vcnmp0"Rgf qo gvt "

r tqi tco u'j cxg'ghgevxgn{ "o qvxcvgf "vj gkt 'wugtu'v'kpetgcug'vj g'co qwpv'qh'r j { ulecn'

cevxkv{ "vj g{ "j cxg'cej kxgf "d{ <i kxkpi "vj gkt 'wugt'vj g'cdkxv{ "v'ugg'vj gkt 'f ckn{ 'r j { ulecn'

cevxkv{ 'lp'vj g'hqto "qh'uvgr u'cpf "ecmtkgu'dwtpgf . 'ugv'i qcu. 'r ctvlekr cvg'lp'ej cmgpi gu. 'cpf "

tgegkxg'ecuj "cpf lqt 'r tk g'kpegpv'xgu'hqt 'c'xctkvg{ "qh'cej kxgo gpw"*Hquvgt. "Nkpgj cp. "("

Ncy uqp. "4232=Mcpj . "Uko qp. "Dctt'gk{c"("Ngg. "422; =XcpY qto gt. "Rtqpm"("Dqwej gt. "

4228+0"F gur kg'tgugctej gta'uwi i guv'qpu'tgi ctf kpi "vj g'ghgevxgpguu'qh'qprkpg'r gf qo gvt "

r tqi tco u. 'o cp{ "go r nq{ gtu'cpf "j gcnj ectg'cf xqecv'gu'ctg'wpcdr'g'v' r tqxkf g'vj g'ecuj "

cpf lqt 'r tk g'kpegpv'xgu'vj cv'j cxg'dggp'cuuqekcvf 'y kj "vj g'uveegu'qh'vj gug'r tqi tco u "

*Dq { eg. "4233=Wpkvgf "Ucvgu'Dwtgcw'qh'Ncdqt'Ucv'ku'ku'J]WUDNU_."4234+0"J gcnj ectg "

cf xqecv'gu'eqv'kpw'v'q'ugctej 'hqt'chhqt'f cdr'g'cpf "ghgevxg'y c { u'v'q'o qvxcvg'cf wnu'v'q "

kpetgcug'vj g'co qwpv'qh'r j { ulecn'cevxkv{ "vj g{ "ctg'i gw'kpi 'lp'cp'cwgo r v'v'q'tgf weg'vj g "

co qwpv'qh'qdgug'qt'qxgty gli j v'cf wnu'tgukf kpi 'lp'vj g'Wpkvgf "Ucvgu"*WUF J J U. "4232+0"*****

Pggf 'hqt'vj g'Uwv{ "

Vj g'co qwpv'qh'qdgug'qt'qxgty gli j v'cf wnu'pqv'qdv'k'kpi "vj g'j gcnj "dgpghku "

cuuqekcvf 'y kj 'r j { ulecn'cevxkv{ "eqv'kpw'v'q'dg'c'r tqdr'go "hqt'vj g'Wpkvgf "Ucvgu0"O cp{ "

f khgtgpv'v{r gu'qh'r gf qo gvt'r tqi tco u'j cxg'dggp'ko r ngo gpygf "cetqu'vj g'pcv'kq. "

r tqxkf kpi 'tgugctej gtu'y kj "gxkf gpeg'v'q'uw i guv'vj cv'vj gug'r tqi tco u'ctg'ghgevxg'y j gp "

vj g{ "ctg'wugf "v'q'o qvxcvg'r j { ulecn'cevxkv{ 'kpetgcugu'lp'vj gkt 'wugtu"*Hquvgt "gv'cr0"4232=Mcpj "gv'cr0"422; =XcpY qto gt "gv'cr0"4228+0"C nq wj j "uwf kgu'j cxg'uj qy p'vj cv'

r gf qo gvg r' tqi tco u'ctg'ghgevkxg'y j gp'kpetgcupi 'r j { ulecn'cevkxk\ 'lp'uo cml' qr wrcvkpu"
 vj g\ 'o c\ { 'pqv'dg'kf gcn'ht'qpi /vgt o 'ko r ngo gpvcvkp'd\ { 'vj g'o clqt\k\ { 'qh'go r m\ { gtu'f wg'vq"
 vj g'cuwo gf "equv'cuqekcvf 'y kj "qhgtkpi "kpegpvkxgu"*Dq { eg."4233="WUDNU."4234+0"
 Cffkklqpcm\ . 'tgugetej gtu'j cxg'j cf 'hko kcvkpu'tgi ctf kpi 'vj g'tguwmu'qh'vj gk 'uwf lgu'cu"
 vj g\ 'j cxg'dggp'wpcdr'vq'f vgt o kpg'kh'vj g'ecuj "cpf lqt'r tk g'kpegpvkxgu"qt'vj g'eqo r gvkkxg"
 ej cmgpi gu'hgcwtgu'y g'g'r tko ctk\ 'tgur qpukdr'ht'o qvxcvkpi 'vj gk'r ctvlekr cpw'vq"
 kpetgcug'vj gk'r j { ulecn'cevkxk\ 'qwr wu"*Hquvt 'gv'crl'4232="Mcp' 'gv'crl'422; +0"
 Ghgevkxgn\ 'ko r ngo gpvkpi 'r gf qo gvg r' tqi tco u'y kj qw'j cxkpi "vq'qhgt'ecuj "cpf lqt'r tk g"
 kpegpvkxgu'y qwf "cmqy 'o qtg'j gcmj ectg'cf xqecvgu'cpf "go r m\ { gtu'vj g'cdkxk\ 'vq"
 cf o kpkvgt'vj gug'r tqi tco u'vq'vj g'i gpgtcn'r wdrl'0"Vj g'cdkxk\ 'vq'\cti gv'c'rci gt'r qr wrcvkp"
 vq'kpetgcug'vj gk'r j { ulecn'cevkxk\ 'qwr wu'y qwf "ecwug'vj g'co qwpv'qh'qdgug"qt'qxgty gki j v'
 cf wnu'tgukf kpi 'lp'vj g'Wpkgf "Ucvgu'vq'f getgcug0'

Rwt r qug'qh'vj g'Uwf { "

Vj g'r wr qug'qh'vj g'uwf { 'y cu'vq'f vgt o kpg'vj g'ghgev'cp'qpnkpg'r gf qo gvg r"
 r tqi tco 'y qwf 'j cxg'qp'vj g'r ctvlekr cpw'y j gp'grgo gpw'qh'eqo r gvkkxg'vj gqt { 'y gtg'wugf "
 cu'o qvxcvkp'cpf "pq'ecuj "cpf lqt'r tk gu'kpegpvkxgu'y g'g'qhgtgf 0"Hwt vj gt. 'k'gzco kpgf 'vj g'
 eqo r gvkkxg'vj gqt lgu'qh'<

- Ulecn'eqo r ctluqp/kpf kxf wcu'lp'c'i tqwr . 'pq'o cwgt'y j cv'uk g'vj g'i tqwr 'ku.'y kni' ukn'dg'o qvxcvfg 'vq'eqo r ctg'qt'eqo r gv"*Hguvkpi gt."3; 76+ "
- Vj g'N/ghgevkpf kxf wcu'eqo r gvkpi "co qpi 'uo cmgt'i tqwr u'qh'gs wcn'cdkxk\ 'y kni' g'zr g'kpegp'cp'kpetgcug'lp'vj gk'o qvxcvkp'vq'eqo r gv"*I ctekc\ ("Vqt."422; +"

- Kpvt/i tqwr 'r ctvkr cvkp/kpf kxf wcn'y qtnkpi 'vqi gvj gt'cu'cp'kpvti tqwr 'qt'ōvgco ö" y kmj cxg'cp'kpetgcug'kp'vj gk'o qvxcvqp'v'eqo r gv'y j gp'eqo r ctgf 'v'qvj gtu" eqo r gvkpi 'cu'kpf kxf wcn' *Vcwt' ('J ctcentgy ke|. '4226+0"

Ucvgo gpv'qh'Rt qdrgo "

" F gur kg'vj g'dgpghku'cuuqekcvf 'y kj 'r j {ulecni'cevxxk\.'pgctn\ '82'r gtegpv'qh'cf wmu' rlxkpi 'kp'vj g'Wpkgf "Ucvgu'ctg'vkm'pqv'i gvkpi 'vj g'tgeqo o gpf gf 'f ckn\ 'r j {ulecni'cevxxk\ " *PEJ U.'422: =WUF J J U.'422: +čpf 'cu'o cp{ 'cu'vy q/vj kf u'ctg'qdgug'qt'qxgty gkij v' *Hgi cni'gv'cni'0'4232=Y ETHIC KET.'422; +0'O cp{ 'qh'vj g'r gf qo gvt'r tqi tco u'vj cvj cxg" dggp'ko r ngo gpv'f 'j cxg'ghgevxgn\ 'o qvxcv'f 'vj g'r ctvkr cpw'v'q'kpetgcug'vj gk'r j {ulecni' cevxxk\ 'qwr wu=] qy gxgt.'tgugetej gtu'j cxg'dggp'wpcdr'v'q'umi i guv'y j kej 'hgcwtgu'y gtg" r tko ctkn\ 'tgur qpukdr'ht'vj g'r j {ulecni'cevxxk\ 'kpetgcugu'dgkpi 'uggp'kp'vj gug'r ctvkr cpw'0'

Tgugetej 'S wgu'kpau'"

" Vj g'hqmjy kpi 's wgu'kpu'tgi ctf kpi 'r gf qo gvt'r tqi tco u'cpf 'vj g'kphwpeg'vj g' " j cxg'qp'kpf kxf wcn'y j gp'cvgo r vki 'v'kpetgcug'vj g'co qwpv'qh'r j {ulecni'cevxxk\ 'vj g' " cej kxg'y gtg'cf f tguugf <"

*3+ Ecp'vj g'eqo r gvkkxg'kpegpv'xg'hgcwtgu'qh'cp'qpnkpg'r gf qo gvt'r tqi tco 'j cxg'c" uki pkhcepv'ghgev'qp'vj g'r ctvkr cpw'tgi ctf kpi 'vj g'co qwpv'qh'lvgr u'vj g' { 'vcng'y j gp" ecuj 'cpf lqt'r tk g'kpegpv'xgu'ctg'pqv'qh'htgf A"

*4+ Fq'vj g'f khtgpv'v{r gu'qh'eqo r gvkkqp' *uo cni' tqwr u'qh'gs wcn'cdkxk\.'kpvti tqwr.'qt" rti g'i tqwr 'qh'xct {kpi 'cdkxk\ +'xct { 'kp'vj g'ghgev'vj g' { 'j cxg'qp'r ctvkr cpw" tgi ctf kpi 'vj g'co qwpv'qh'lvgr u'vj g' { 'vcng'A'

*5+ Y kn'ij g'eqo r g'k'k'g'k'p'ep'v'k'g'h'g'c'w't'g'u'q'h'c'p'q'p'r'k'p'g'r'g'f'q'o'g'v'g't'r't'q'i't'c'o' 'j'c'x'g'c'"
 uki p'k'h'c'p'v'g'h'g'ev'q'p'v'j'g'r'c't'v'k'k'r'c'p'u'g'z'r'g't'k'o'g'p'v'c'n'y'j'g'p'v'j'g'{'c't'g'eqo r c't'g'v'q'c'"
 eq'p't'q'r'i' t'q'w' A'"

*6+ Y kn'ij g'eqo r g'k'k'g'k'p'ep'v'k'g'h'g'c'w't'g'u'q'h'c'p'q'p'r'k'p'g'r'g'f'q'o'g'v'g't'r't'q'i't'c'o' 'j'c'x'g'c'"
 uki p'k'h'c'p'v'g'h'g'ev'q'p'v'j'g'r'c't'v'k'k'r'c'p'u'g'z'r'g't'k'o'g'p'v'c'n'y'j'g'p'eqo r c't'k'p'i' 'v'j'g'k't'"
 eqo r g'k'k'g'k'p'ep'v'k'g'u'v'g'r' 'f'c'v'v'q'v'j'g'k't'q'y'p'd'c'u'g'r'k'p'g'u'v'g'r' 'f'c'v'c'A'

Nlo k'c'v'k'p'u'

" Vj g'X'k'i'k'p'J'g'c'm'j'O'k'g'u'r't'q'i't'c'o' 'y'c'u'w'u'g'f'v'q'o'g'c'u'w't'g'v'j'g'r'j'{'u'k'e'n'i'c'e'v'k'k'v'{"
 q'w'r'w'u'q'h'c'f'w'u'k'p'v'j'g'y'q't'n'r'n'e'g'0'V'j'g'u'w'f'{'r'c't'v'k'k'r'c'p'u'y'q't'n'g'f'c'v'v'j'g'D't'c'j'c'o' 'u'e'j'q'q'n'i'
 f'k'u't'k'v'k'p'D't'c'j'c'o' . 'O'k'p'p'g'u'q'v'c'0'V'j'g'o'c'l'q't'k'v'{'q'h'v'j'g'r'k'o'k'c'v'k'p'u'c'u'u'q'ek'v'g'f' 'y'k'y' 'v'j'k'u'u'w'f'{'
 y'g't'g'f'w'g'v'q'v'j'g'er'k'o'c'v'g.'r'c't'v'k'k'r'c'p'v'x'c't'k'd'r'g'u.'c'p'f'v'k'o'g'q'h'{'g'c't'v'j'g'u'w'f'{'y'c'u'e'q'p'f'w'e'v'g'f'0'"
 V'j'g'r'k'o'k'c'v'k'p'u'q'h'v'j'g'u'w'f'{'k'p'e'n'f'g'f'<'

- Q'p'n'{'g'o'r'm'j'{'g'g'u'v'j'c'v'k'i'p'g'f'w'r' 'h'q't'v'j'g'u'e'j'q'q'n'u'y'g'm'p'g'u'u'g'x'g'p'v'c'p'f'r'w'e'j'c'u'g'f'c'"
 r'g'f'q'o'g'v'g't'h'q't'&5202'y'g't'g'c'd'r'g'v'q'r'c't'v'k'k'r'c'v'g'k'p'v'j'g'u'w'f'{'0'"
- V'j'g'u'w'f'{'j'c'f'62'r'c't'v'k'k'r'c'p'u'0'"
- V'j'g'r'c't'v'k'k'r'c'p'u't'c'p'i'g'f'k'p'c'i'g'h'q'o'46/930'
- V'j'g'r'c't'v'k'k'r'c'p'u'y'g't'g'c'd'r'g'v'q'c'e'g'u'u'v'j'g'k't'c'ee'q'w'p'u'h'q'o'c'p'{'e'q'o'r'w'g't'e'q'p'p'g'e'v'g'f'"
 v'q'v'j'g'k'p'v'g't'p'g'v'c'h'g't'v'j'g'{'w'r'm'q'c'f'g'f'v'j'g'u'q'h'y'c't'g'0'U'q'o'g'r'c't'v'k'k'r'c'p'u'f'k'f'p'q'v'j'c'x'g'"
 k'p'v'g't'p'g'v'c'e'g'u'u'k'p'v'j'g'k't'j'q'o'g'u'c'p'f'y'g't'g'q'p'n'{'c'd'r'g'v'q'c'e'g'u'u'v'j'g'k't'c'ee'q'w'p'u'c'v'v'j'g'"
 u'e'j'q'q'n'i'0'
- V'j'g'r'c't'v'k'k'r'c'p'u'y'g't'g'c'd'r'g'v'q'o'c'n'g'u'q'ek'n'e'q'o'r'c't'k'u'p'u'y'j'k'e'j' 'o'c'{'j'c'x'g'k'p'e't'g'c'u'g'f'"
 v'j'g'h'g'g'n'j'q'q'f'q'h'e'j'g'c'v'k'p'i' *k'g'0'uj'c'n'k'p'i'c'r'g'f'q'o'g'v'g't'd'{'j'c'p'f'c'w'c'ej'k'p'i'r'g'f'q'o'g'v'g't'"

vq"cr gv'gve0+lp"qtf gt"vq"cxqkf"cp{"go dcttcuo gpv'qh] cxkpi "ny gt"uvg "eqwpu"
vj gp"qvj gtu0"

- Vj g'r ctvlekr cpw'npgy "vj cv'vj gk"fcv'y cu'dgkpi "eqmgevfg"cpf "wugf"ht"vj g'uwf {"
y j lej "o c{"j" cxg'o qvxcvfg "vj go "vq"lpetgcug"vj gk"r j {ulecn'cevxxk{"qwr wu0"
- Cp{"r ctvlekr cpw'lpqxqkfg"lp"lpf qqt"xqmg{dcm'ngci wgu."cgtqdku'emcuugu."y cmkpi "
enxdu'gve0] cf"ftco cvle"lpetgcugu"lp"vj gk"r j {ulecn'cevxxk{0"
- Vj g'r ctvlekr cpw'i qkpi "qp"xcecvkqpu]"cf"ftco cvle"lpetgcugu"lp"vj gk"r j {ulecn'
cevxxk{0"lpetgcugu"o c{"j" cxg"dggp"uggp"ht"vj qug"xcecvkqkpi "lp"ctgcu"y j gtg"
vqwkiv'cwtcevqpu."co wugo gpv'r ctmu."cpf "uki j suggkpi "qr r qtwpkku"y gtg'r qr wxt0"
- Vj g'r ctvlekr cpw'i qkpi "qp"xcecvkqpu]"cf"ftco cvle"lpetgcugu"lp"vj gk"r j {ulecn'
cevxxk{0"lpetgcugu"o c{"j" cxg"dggp"uggp"ht"vj qug"xcecvkqkpi "lp"s wgv'necvkqpu"
y j gtg"tgcf kpi ."nywpi kpi "cpf "tgrczkpi "y gtg'r qr wxt0"
- Wukpi "pgy "r gf qo gvg"gs wkr o gpv'cuipi "y kj "dgkpi "cdng"vq"xkuwcm{"ugg"r tqi tguu"
tgrvxxg"vq"uvg "eqwpu"eqwf"j cxg"ecwugf "r ctvlekr cpw'u"vq"j cxg"oj ki j gt"vj cp"
pqto crö"dcugrkpg"uvg "eqwpu"o gcp0"
- Vj g'xct{kpi "y kvgt"y gcvj gt"eqpf kkkqpu"cpf "vgo r gtcwtg"o c{"j" cxg"rko kfg "vj g"
co qwpv'qh'r j {ulecn'cevxxk{"vj g'r ctvlekr cpw'y gtg"cdng"vq"i gw0"
- Vj g'r ctvlekr cpw'gZR gtgpekpi "kmpgu"qt"lplwt {"o c{"j" cxg"j" cf"ftco cvle"lpetgcugu"
lp"vj gk"r j {ulecn'cevxxk{0"
- Uqo g'r ctvlekr cpw'nyuv."y tgenfg".dtqng."qt"qvj gty kug"ecwugf "vj gk"r gf qo gvgtu"vq"
dg"lpcf gs wcvg"qt"wpwucdng"ht"fcv"eqmgevkgp0"

"

"

F grko kcvkqpu'

" Vj g'f grko kcvkqpu'qh'vj g'uwwf { 'y gtg'ugv'd { 'vj g'tgugctej gt'cu'c'o go dgt'qh'vj g' uej qqm'u'Y gmpguu'Ego o kwgg0'Hwtvj gt'f grko kcvkqpu'y gt'f wg'vq'vj g'tgugctej gt'j cxkpi "c" vko g'iko k'lp'y j lej 'vj g'uwwf { 'j cf 'vq'dg'eqpf wevgf 'lp'qtf gt'vq'o ggv'vj g'lpukwwkqpcnt'gxkgy " dqctf "cpf 'i tcf wcvkqp'tgs vktgo gpvu0"Vj g'f grko kcvkqpu'qh'vj g'uwwf { 'kpenmf gf <"

- Vj g'uwwf { 'y qwf 'dg'eqpf wevgf 'lp'Dtcj co 'O kppguvc "
- Qpn{ "go r nq { ggu'qh'vj g'Dtcj co 'uej qqnf kutlev'y gt'g'lp'xk'gf 'vq'r ct vkr cvg'lp'vj g' uej qqn'y gmpguu'gxgp0""
- Vj g'uwwf { 'y cu'eqpf wevgf 'qxgt'c'r g'kqf 'qh'qpg'o qpvj 'Itqo 'Hgdwtct { "32'vj tqwi j " O ctej "32vj 0""
- S wcp'kcvk'g'f c'c'y cu'qdvk'pg'f 'wtkpi 'vj g'htuv'y ggm'qh'vj g'uwwf { "cpf 'wugf 'cu'c" dcugr'kg'o gcuw'tg'vj tqwi j qw'vj g'uwwf { 0' "
- Vj g'Rt'gvuv'Rquwguv'Eqpvtqn'I tqwr 'f guki p'y cu'ko r ngo g'pv'f 0"
- Vj g'X'kti kp'J gcmj O k'gu'r gf qo g'vgt'r tqi tco 'y cu'wugf 0""
- Rct'vkr cpw'htq' g'w'kpi 'vq'y gct'vj g'k'r gf qo g'vgtu'f wtkpi 'vj g'vko g'qh'f c'c"eqm'ge'v'k'p" y gt'g'gzemf gf 'Itqo 'vj g'uwwf { "
- Rct'vkr cpw'y j q'htuv'y t'genf . 'dtqng. "qt'q'vj gty kug'ecwugf 'vj g'k'r gf qo g'vgtu'vq'dg" k'pcf gs wcv'g'cpf 'wpwucdng'ht'f c'c"eqm'ge'v'k'p'y gt'g'gzemf gf 'Itqo 'vj g'uwwf { "
- Rct'vkr cpw'y j q'gpi ci gf 'kp'o c'tcvj qpu'qt'y cm'c/vj qpu'y gt'g'gzemf gf 'Itqo " r q't'v'k'p'u'qh'vj g'uwwf { 0' "

"

"

Cuuwo r vkpu'

" O cp{ "qh'v'j g'r ctvkr cpw'kp'v'j g'uwwf { 'y gtg'v'gcej gtu'cpf 'v'j gtghqtg'j cf 'tgegkxgf "c" hqwt/ { gct 'f gi tgg'htqo "c"wpkxgtukv{ 0"K'y cu'cuuwo gf 'v'j cv'v'j g'r ctvkr cpw'y gtg'cdng'v'q'tgcf " cpf 'w'pf gtucpf 'v'j gk'tgur qpukdkkkgu'cuuqekv'gf 'y kj 'v'j g'uwwf { 0"Vj g'tgugctej gt'j cf " r t'gxlqwu'gzr g'kgpeg'y kj 'v'j g'Xki kp'J gcnj O k'gu'r gf qo g'vgt'r tqi tco 'y j lej 'hgf 'v'q'v'j g" cuuwo r vkp'v'j cv'v'j g'r ctvkr cpw'y q'w'f "dg'cdng'v'q'r g'c'v'g'v'j gk'r gf qo g'vgt'cpf 'v'j g" r tqi tco 'y kj "o wej 'gcug0"Y j gp'gzco k'kpi 'v'j g'r ctvkr cpw'k'pxq'k'gf 'k'p'v'j g'uwwf { . 'v'j g" t'gugctej gt'o cf g'v'j g'hqmqy kpi 'cuuwo r vkpu'<

- Rctvkr cpw'j cf "c'w'g'p'f gf "c"t'c'k'p'k'pi 'u'gu'k'q'p'r w'q'p'd { 'v'j g't'gugctej gt'cpf 'y gtg' v'j gtghqtg'cdng'v'q'w'ug'v'j gk'r gf qo g'vgtu'cpf 'u'pe'v'j go 'v'q'v'j gk'eqo r wgtu'y kj qw' g'zr g'kgpeg'cp { 'f h'k'w'k'gu0'
- Rctvkr cpw'j cf "o cf g'cp'gh'htv'v'q'y gct 'v'j gk'r gf qo g'vgtu'gxgt { 'f c { 0'
- Rctvkr cpw'gpi ci gf "k'p'õ'p'q'to c'ri'co q'w'p'u'q'h'r'j { u'k'c'n'c'e'v'k'k'v' { 'h'q't'v'j gk'd'cug'k'p'g" y ggn'lo g'cuw'gu0'
- Rctvkr cpw'f'k'f 'p'q'v'ej g'cv'cu'v'j g { 'j cf 'u'ki p'g'f "c"f'q'ewo g'p'v'uc'v'k'pi 'v'j cv'v'j g'uvgr " eqw'p'v'j g { 'r t'q'x'k'f gf 'y cu'j q'p'gu'v'cpf 'v'j cv'v'j g { 'y gtg'v'j g'q'p'n' { 'k'p'f'k'k'f w'c'n'y j q'y q'tg' v'j g'r gf qo g'vgt'v'j t'q'w'j q'w'v'j g'v'ko g'r g't'k'q'f "qh'v'j g'uwwf { 0'
- Rctvkr cpw'y cp'w'gf 'v'q'd'geqo g'o q'tg'r'j { u'k'c'm' { "c'e'v'k'x'g0"
- Vj g'o cl'q't'k'v' { "qh'v'j g'r ctvkr cpw'j cf "c'e'egu'v'q'v'j gk'c'ee'q'w'p'u'ht'qo "v'y q'v'q'ec'v'k'p'u." v'j gk'uej q'q'n'eqo r wgtu'cpf 'v'j gk'j qo g'eqo r wgtu.'f w'g'v'q'v'j g'i t'q'y v'j "qh'v'j g" k'p'v'g't'p'g'v'cpf 'w'ug'q'h'eqo r wgtu'd { 'v'j g'i g'p'g't'c'n'r w'd'k'e0'

"

"

Fghpkkqp'qhVgt o u'

- **Rj { ulecnCevkkl/Cp{ 'cevkkl{ 'lp'y j lej 'c"dqf { 'ku'lp'o qvqp'tevj gt'vj cp'cv'tguv'**
 - **UqekriEgo r ctluqp'Vj gqt{/J wo cpu'r quugu'c'f tkxg'ht'ugrh/gxcnvcvqp"cpf ""**
 hxyj gto qtg.'lpf kxf wcu'eqwf'ngctp'cdqw'vj gk'cdkklgu'cpf 'cwkxf gu'd{"
 eqo r ctkpi 'vj go ugrgu'y kj 'qyj gtuORgqr ng'o quv{ 'uggn'vq'eqo r ctg'vj go ugrgu'
 y kj 'uqo gqpg'j cxlpi 'tgcupcdrg'uko kctklgu'vq'vj go .j qy gxgt.'kh'pq'lpf kxf wcu'
 ctg'r tguvp'vj cv'j cxg'tgcupcdrg'uko kctklgu=eqo r ctluqp'y kn'wuwcm{ 'dg'o cf g'vq"
 cp{ qpg'r tguvp'cv'vj g'vko g'qh'eqo r ctluqp"*Hguvpi gt."3; 76+0"
 - **UqekriKpvtf gr gpf gpeg'Vj gqt{/Vj g'eqpegr v'dgj kpf 'vj ku'vj gqt{ 'vj cv'lp"qtf gt'ht"**
 k'uqekriKpvtf gr gpf gpeg'vq'gzku.'lpf kxf wcu'pggf 'vq'uj ctg'eqo o qp'i qcu'cpf "
 gcej 'lpf kxf wcu'qweqo gu'ctg'chgevgf 'd{ 'vj g'cevqpu'qh'qyj gtu"*Ucpgg.'Lqj puqp."
 F0Y 0(' 'Lqj puqp."3; ; ; .r 056+0"
 - **Kpvt/I tqwr 'Ego r gvklqp/C"eqpvgu'dgy ggp'vy q'qt'o qtg'i tqwr u"*Vcwtg"("**
 J ctcentgy kel .4226+0'
 - **Eqqr gt cvklqp/Y qtnkpi 'vqi gyj gt'vq'ceeqo r rkuj 'uj ctgf "i qcu'0'lpf kxf wcu'**
 r gthqto cpeg'ku'ej gengf 'tgi wrctn{ 'vq'gpwtg'vj cv'cm'r ct vkr cpw'ctg'eqpvtkdwkpi "
 tgi wrctn{ö"*Lqj puqp."F0Y 0(' 'Lqj puqp."3; ; ; .r 0: 8+0'
- É **Rgf qo gvgt/"Cp'lpustwo gpv'tgeqtf kpi 'f kucpegu'c'r gtuqp'eqxgtu'qp'hqqv'd{ "**
 o qpkqtkpi 'vj gk'uvgr u"*Vwf qt/Nqeng."('Dcuugw."4226+"
- É **Ego r gvklqp/Vq'f guktg'vq'cwclp'c'i qcn'ci clpuv'qyj gt'lpf kxf wcu.'uwej "cu'cp"**
 cf xcpvci g'qt'c'xkqvqt{ "*O cnj qtwc."4232+"
- É **O qvkvclqp/Vj g'f tkxkpi 'hteg'd{ 'y j lej 'j wo cpu'cej kxg'vj gk'i qcu '*O cnj qtwc."**
 4232+"

É **Gs wcnlCdkk**{ **I t qwr u** /kpf kxf wcnl'j cxlpi 'uko krc 'cej kxgo gpv'ngxgnu'qh'dcugrkpg"
f cvc'ctg'r mæg f 'kpq'ur gekk'e'i tqwr u'y j gp'eqpf wekpi 'uko krc 'vcumi'*Vwf qt/Nqeng"
('Dcuugw.'4226+'

É **kpegv**kgu/T gy ctf u'kgo u'xlgy gf 'cu'f guktcdng'i kxgp'vq'kpf kxf wcnl'wr qp'vcum'
eqo r ngkqp"*O cnj qtwc."422; +'"

É **Ugr 'Eqwv**pi **'Rt qi tco u**/Xctkqwu'r tqi tco u'cf o kpxugt'gd { "go r m{ gtu'yj cv'wug"
r gf qo gvtu'qt'ceegrqtgo gvtu'y kj 'yj g'i qcn'qh'kpetgcukpi 'r j { ulecn'cevkxk{ "
*Dq { eg.'4233+0'

Uwo o ct { "

" Cnj qwi j 'i gwkpi 'yj g'tgeqo o gpf gf "co qwpv'qh'r j { ulecn'cevkxk{ "ecp'tgf weg'yj g"
tkun'qh'ces wtkpi "o cp { "qh'yj g'j gcnj "eqpf kkpqr' tngxngpv'kp'yj g'Wpkgf "Ucvgu.'yj gtg'ku'pqv"
uwk'lekgpv'gkxk' gpeg'vq'uw i guv'yj cv'yj g'o clqtk{ "qh'cf wnu'lp'Co gtlec'ctg'i gwkpi 'yj ku"
co qwpv'*Hgi cn'gv'cn0"4232= Y ETHIC KET."422; +0"Vj g'Uwti gqp'I gpgtcnj cu'o cf g'k'
gkxk' gpv'yj cv'gpeqwtci kpi 'kpetgcugu'kp'r j { ulecn'cevkxk{ "ku'cv'yj g'vqr 'qh'j gt'r tkqtkk'gu'hqt'cm"
Co gtlecpu'*WUF J J U."4232+0"J gcnj ectg'cf xqecvgu'cpf "go r m{ gtu'eqpv'kwg'vq"
ko r ngo gpv'r tqi tco u.'y kj "qpr'kg'r gf qo gvt'r tqi tco u'dgkpi "co qpi 'yj g'o quv'r qr wrct.'kp"
cp'cwgo r v'v'f getgcug'yj g'co qwpv'qh'qdgug'qt'qxgty gli j v'cf wnu'tgukf kpi 'kp'yj g'Wpkgf "
Ucvgu'*Hqugt'gv'cn0"4232=Mcp i "gv'cn0"422; =XcpY qto gt'gv'cn0"4228+0" Tgugctej gtu'j cxg"
uw i guvgf 'yj cv'r gf qo gvt'r tqi tco u'ecp'dg'wugf 'vq'gh'gevkxgn{ "o qv'xcv'kpf kxf wcnl'vq"
kpetgcug'yj g'co qwpv'qh'r j { ulecn'cevkxk{ "yj g{ "cej kxg."j qy gxgt.'yj g'ur gekk'e'xctkcdng"
tgur qpukdng'hqt'vki i gkpi 'yj ku'o qv'xcv'kqp'tgo clpu'wmpqy p"*Hqugt'gv'cn0"4232=Mcp i "gv'
cn0"422; =XcpY qto gt'gv'cn0"4228+0" Hwtj gto qtg.'yj g'o clqtk{ "qh'r gf qo gvt'r tqi tco u"
yj cv'j cxg'dggp'tgugctej gf.'j cxg'qh'gtgf'ecuj "cpf lqt'r tk' g'tgy ctf u'vq'yj gk'r ct'v'ekr cpw."

y j lej 'r tgugpwu'c"ej cmgpi g"vq"vj qug'y cpvpi "vq"vcti gv'c'rti g'r qr wvkvq "Dq{eg."4233="

WUDNU."4234+0"Rgf qo gvg'r tqi tco u'j cxg'vj g'ecr cekv "vq"o qvkvvg'vj gk'r ctvkr cpw'lp"c"

xctkgv "qh'y c{u=j qy gxgt."vj gtg'ku'kpwhlekpvtgugctej "vq"uwi i gu'vj cv'vj gug'r tqi tco u'ctg"

ghgekvxg'y j gp"ecuj "cpf lqt'r tk g'kegpvkvgu'ctg'pqv'qhgtgf 0"

"

"

"

"

"

"

"

"

"

"

"

"

"

"

"

"

"

"

"

Ej cr vgt '4<Tgxly 'qhTgr vgf 'Nkgt cwt g'

Kpvt qf wevkqp'''

" Vj g'co qwpv'qh'qxgty gki j v'cpf "qdgug'cf wnu"eqpv'kwgu'vq'dg'c'r tqdrgo 'kp'vj g"
 Wpkvgf "Ucvgu'f gur kg'vj g'o cp{ 'j gcnj "dgpghku'cuuqek'v'f y kj 'h'k'kpi 'c'r j { ulecn' 'cevk'xg"
 rkguv'f ng' "Hgi cn'Ecttqm"Qi f gp"('Ewt'v'p.'4232="PEJ U.'422: ="WUF J J U.'422: ="
 Y ETHIC ET.'422; +0"Hqt'vj g'r wtr qug'qh'vj g'uwf { . 'vj g'ctgcu'qh'hkgtcwtg'tgxly gf 'vj cv"
 r gtv'k'p'gf "v'cf wv'k'p'cevk'k'v'f 'y gtg'r tko ctkn' 'wug'f'v'q'r t'gugpv'vj g'r tqdrgo "vj g'Wpkvgf "Ucvgu"
 ku'h'ek'pi "tgi ctf kpi "vj g'pwo dgt'qh'cf wnu'y j q'ctg'ewttgpw'f "pqv'i gw'kpi "cf gs wcv'g'r j { ulecn'
 cevk'k'v'f 0"Vj g'ueqr g'qh't'gugctej 'kpen'f gf 'vj g'uwf kgu'f qpg'k'p'hqmy kpi "ctgcu'<gh'gevk'xg"
 r gf qo gvg't'r tqi tco u."eqo r gv'k'k'xg'vj ggt { . 'o q'v'k'c'v'k'p'cn'vj ggt { . 'vj g'eqpxgtuk'qp'qh"
 r gf qo gvg't'uvr u'k'p'v'q'r j { ulecn'cevk'k'v'f "gs w'k'c'rg'p'el'gu."cpf "gh'gevk'xg'i tqw kpi "hqt'k'pet'g'cu'gf "
 o q'v'k'c'v'k'p'0"Vj g'eqo r k'v'k'p'qh't'gugctej 'y cu'eqpf gpug'f "k'p'v'h'k'xg'hqmy kpi "ecv'gi qt'k'gu"0"
 Vj g'ecv'gi qt'k'gu'k'pen'f gf <*"c'+cp"gh'gevk'xg'r gf qo gvg't'r tqi tco "wuk'pi "u'q'ek'n'leqo r ct'ku'pu"
 y kj qw'k'p'egpv'k'x'gu. "d'+gh'gevk'xg'r gf qo gvg't'r tqi tco u'wuk'pi "u'q'ek'n'leqo r ct'ku'pu'y kj "
 k'p'egpv'k'x'gu. "e'+eqo r gv'k'k'xg'cpf "u'q'ek'n'leqo r ct'c'v'k'xg'vj ggt'k'gu'cpf "vj g'gh'ge'v'vj g'f { 'j c'xg'qp"
 o q'v'k'c'v'k'p'f w'k'pi "k'p'f k'k'f wcn'leqo r gv'k'k'p'co qpi "uo cm'i tqw u'qh'gs wcn'cd'k'k'v'f . 'k'p'f k'k'f wcn'
 eqo r gv'k'k'p'co qpi "c'ixti g'i tqw "qh'xct { k'pi "cd'k'k'v'f "cpf "k'p'v'gti tqw "qt'ö'v'gco ö"
 eqo r gv'k'k'p.'f "+eqpxgt'v'k'pi "r gf qo gvg't'uvr u'k'p'v'q'r j { ulecn'cevk'k'v'f "rg'x'gnu'hqt'cr r tqr tk'cv'g"
 i tqw kpi "cpf "g'+uwo o ct { "qh't'gxly gf "hkgtcwtg0'"

Cp'Gh'gevk'xg'Rgf qo gvg't'Rt qi tco 'wuk'pi 'U'q'ek'n'leqo r ct'ku'pu'y k'j qw'k'p'egpv'k'x'gu'

Qxgt'vj g'ncu'f ge'cf g.'o cp{ 't'gugctej gtu'j c'xg'eqpf we'v'gf "uwf k'gu'qp'vj g"
 gh'gevk'xg'p'guu'qh'q'p'k'p'g'r gf qo gvg't'r tqi tco u' "M'cp' "gv'cn'0"422; +0"K'p'cp'c'wgo r v'v'q't'gf we'g"
 vj g'co qwpv'qh'Co g't'le'cpu'uw'h'gt'k'pi "h'qo "hqt'gugg'cd'n' "r t'gx'p'v'cd'ng'k'm'p'gu'gu.'r gf qo gvg't"

r tqi tco u'j cxg'dggp'f guki pgf "uq'vj cv'eqo r cplgu'ecp'cf o lpluvgt 'vj go 'lp'vj g'y qtnr nreg'vq"
o qvxcvg'vj gkt'go r nq { ggu'vq'lpetgcug'vj g'co qwpv'qhr'j { ulecn'cevxxkv' 'vj g' 'ctg'i gwłpi 0Qpg"
uwf { 'eqpf wewgf "cv'vj g'Nkpeqrp"Uqekn'Eqo r włpi "Tgugcte'j "Egprtg"*Hquvgt "gv'cn0"4232+ "
hqwpf "vj cv'y j gp'włpi 'uko r ng'o qdkg'f gxlegu"*KQ0'r gf qo gvgtulceegrtqo gvgtu+ "cpf "cp"
qprkpg'uqekn'pgy qtnr"*Hcegdqqr: "cf wmu'eqwrf "uweeguuhwm { "dg'o qvxcvgf "vq'lpetgcug'vj gkt"
f ckn { 'r j { ulecn'cevxxkv' "qwr wu0"Vj ku'uwf { 'j cf "y q'i tqwr u'qhr' ctvłkr cpw. "qpg'i tqwr 'y cu"
uqekm{/gpcdrgf. "vj g'qyj gt'pqp/uqekn0"Kp'vj g'uqekm{/gpcdrgf "eqpf kłqp. 'r ctvłkr cpw"
y gtg'cmqy gf "vq'xkgy "gcej "qyj gtu'uvgr "f cvc"cpf "r quv'eqo o gpw'r gtvłkłpi "vq'dqyj "vj gkt"
f ckn { "uvgr "eqwpw'cpf "vj g'uvgr "eqwpw'qh'qyj gt'r ctvłkr cpw'lp'vj g'i tqwr 0"Kp'vj g'pqp/uqekn'
eqpf kłqp. 'r ctvłkr cpw'eqwrf "qpn { 'xkgy "vj gkt'qy p'r gtuqpcn'uvgr "f cvc0"Vj ku'uwf { "
uwi i guvgf "vj cv'; B2'r ctvłkr cpw'y cmgf "o qtg'uvgr u'qt' i qv'o qtg'r j { ulecn'cevxxkv' . 'y j gp"
vj g' 'y gtg'lp'vj g'uqekm{/gpcdrgf "i tqwr 0"Rctvłkr cpw'u'tgur qpugu'y gtg'f qewo gpvgf "cpf "
vj g'eqo o gpw'uj qy gf "vj cv'vj g'eqo r gvxxg'cur gev'qh'dgłpi "cdrq'vq'xkgy "qyj gtu'uvgr "eqwpv"
vqwnu'y cu'c'o cłp'eqo r qpgpv'tgur qpukdrq'hqt"o qvxcvłpi "vj g'łpf kłkf wcu'vq'lpetgcug'vj gkt"
r j { ulecn'cevxxkv' "qwr wu0""

Hquvgt. "Nkpgj cp"cpf "Ncy uqp"*4232+ "uwi i guvgf "vj cv'vj g'wug'qh'uvgr "eqwvłpi "
f gxlegu'cpf "uqekn'eqo r ctkuqpu'eqwrf "hwpvłqp'cu'uweeguuhw'vki i gtu'hqt'r qukxg'ej cpi gu"
lp'dgj cxkqt0"Ceeqtf łpi "vq'Hquvgt"cpf "eqngci wgu"*4232. 'r 0+vj g'eqpenwłkpu'f tcy p'htqo "
vj ku'uwf { 'y gtg'vj cv'vj g'uqekn'cpf "eqo r gvxxg'lpvgtcevłkpu'qeecukłpgf "d { 'vj g'uqekn'
xgtulqp'qh'vj g'Uvgr "O cvtqp"Hcegdqqr'cr r rıecvłqp"o qvxcvgf "r ctvłkr cpw'vq'dgeqo g'o qtg"
r j { ulecm { "cevxxg'f włpi "y qtn0"HWvj gto qtg. "Hquvgt"cpf "eqngci wgu"uwi i guvgf "vj cv'vj g"
łpf kłkf wcu'cdkkr { "vq'o cng'vj g'uqekn'eqo r ctkuqpu'y cu'tgur qpukdrq'hqt'vj g'r j { ulecn'

cevkxk{ 'kpetgcugu'dgkpi 'uggp'cu'vj g{ 'y gtg'cdng'vq'vj qtqwi j n{ 'gzco kpg'dgj cxkqtcnlhcevtu"
cmipi 'y kj 'vj g'uvgr 'vj g'eqwpvf cwc'qh'vj g'qyj gt 'r ctvlekr cpw0"

Vj g'r ctvlekr cpw'lp'vj g'uwf { 'xkgy gf 'vj gkt'uvgr 'eqwpw'y j krg'y qtnkpi =j qy gxgt"
Hqugt'cpf 'eqmgci wgu*4232+'uwi i guvgf 'vj cv'uvgr u'vcnmp'o c{ 'j cxg'dggp'xkgy gf 'o qtg"
f {pco kcm{ 'd{ 'r ctvlekr cpw'tcyj gt'vj cp'lwuv'o gtgn{ 'xkgy kpi 'uvgr u'cu'f cvc<

K'ku'r quukdng'vj cv'vj gug*f cwc'tgrvxf 'vq'uvgr u+'y gtg'eqpukf gtgf 'pqv'r wtgn{ "" "
" cu'vj g'pwo dgt'qh'uvgr u'vcnmp.'dw'cu'uvgr u'emugt'vq'dgcvki 'vj gkt'htkpgf.'uvgr u"
" emugt'vq'y kppkpi.'qt'cu'c'r gthqto cpeg'vj cv'poggf gf 'vq'ej cpi g'kp'qtf gt'vq'cej kexg"
" gs wcnk{ 'y kj 'hgmqy 'r ctvlekr cpw0Y kj qw'vj g'eqo r gvkkxg'Hcegdqnm'cr r hcevkp." "
" vj ku'y qwf 'pqv'j cxg'dggp'r quukdng0*r B+

Hqugt'cpf 'eqmgci wgu'pvgxt'lpkxcvxf 'cp'qh'hekn'eqo r gvkkp'qt'qh'gtgf 'kpegpv'xgu'hq"
y kppkpi 'cp{ 'v{r g'qh'eqo r gvkkp0"Vj g{ 'c'f'f'gf 'c'hgcwtg'vq'vj gkt'y gdukg'cunkpi 'vj g"
s wgnkq"oy j q'i qv'vj g'o quv'uvgr u'vq'f c{ o'cpf 'vj g'r ctvlekr cpw'dgi cp'gpi ci kpi 'kp'vj gkt'qy p"
eqo r gvkkp0"Hqugt'cpf 'eqmgci wgu'uwi i guvgf 'vj cv'cf'f'kqpcnt'gugctej 'uj qwf 'dg"
eqpf wexf 'qp'vj gug'v{r gu'qh'uqekm{ 'eqo r ctcv'xg.'qprkpg'uvgr 'eqwp'kpi 'r tqi tco u'lp'qtf gt"
vq'f gvgto kpg'vj gkt'ghgevkxgpguu0"Cnj qwi j 'Hqugt'cpf 'eqmgci wgu'f'kf 'pqv'qh'gt'cp{ 'ecuj "
cpf lqt'r tk'g'kpegpv'xgu'vq'vj g'r ctvlekr cpw'lp'vj gkt'uwf {.'r j { ulecn'cevkxk{ 'kpetgcugu'y gtg"
u'kn'r tgcxrgpv'co qpi 'vj g'r ctvlekr cpw'lp'vj gkt'uqekm{/gpcdrf 'i tqwr 0"Vj gkt'tgugctej "
uwi i guvgf 'vj cv'vj g'wug'qh'ecuj 'cpf lqt'r tk'g'kpegpv'xgu'o c{ 'pqv'dg'pgeguact { 'hq'vj gug"
v{r gu'qh'r tqi tco u'vq'dg'ghgevkxg0"''''

Ghgevkxg'Rgf qo gvg' Rt qi tco u'wulpi 'UqekriEqo r c't'ku'pu'y kj 'Kpegpv'xgu''

Rgf qo gvg'r tqi tco u'uko kct'vq'vj g'qpg'tgugctej gf 'd{ 'Hqugt'cpf 'eqmgci wgu"
*4232+'cpf 'cnuq'o qtg'cf xcpegf 'qt'f gxgnr gf 'r gf qo gvg'r tqi tco u'vj cv'qh'gt'ej cmipi g"

hgcwtgu'cpf "ecuj "cpf lqt'r tk g'kpegpvkgu."j cxg'dggp'cpcn{| gf 'tgi ctf kpi 'yj gk"
 ghgevkxgpguu"*Mcpj "gv'crf0"422; +0"Qpg'uwwf { "eqpf wevgf "d{ 'yj g'F kcdgvu"Ur gestwo "
 uj qy gf "cp'kpetgcug'qh'o gcp'f ckn{ "uvr u'd{ "43' 'y j gp'kpegpvkgu'y gtg'wugf "v'o qvxcvg"
 cevkxk{ "*XcpY qto gt'gv'crf0"4228+0"TGugctej gtu'eqpenwf gf "yj cv'vj gug'r tqi tco u'o c{ 'j cxg"
 dggp"ghgevkxg'uqrgn{ "dcugf "qp'vj g'kpegpvkgu'dgkpi "qhhgtgf 0"Wukpi "kpegpvkgu'v'o qvxcvg"
 kpf kxf wcnu"j cu'dggp'f qpg'kp'c'xctkv{ "qh'ugvki u0"Hwtvj gt'tgugctej 'y cu'f qpg'vq"
 f gvgto kpg'y j cv'ghgev'qhhgtkpi "ecuj "cpf lqt'r tk g'kpegpvkgu"j cf "qp'cp'kpf kxf wcnf0

Vj g't kuniqhvwpf gult gf 'dgi cxkqt u'y j gp'qhhgt kpi 'kpegpvkgu0'k'c'uwwf { "

eqpf wevgf "d{ "O cnj qtwc"*4232+="yj g'grgo gpw'chgevkpi "cp'kpf kxf wcnu'f gult g'v'eqo r gvg"
 y gtg'vj qtqwi j n{ "cpcn{| gf 0"Wr qp'tgxky kpi 'yj ku'tgugctej 'k'y cu'f gvgto kpgf 'yj cv'cp"
 cuuqekvqp'gzkuu'dgvy ggp'kpetgcugf 'tkunhcevtu'vq'cp'kpf kxf wcnu'y j gp'vj g{ "ctg'qhhgtgf "
 ecuj "cpf lqt'r tk g'kpegpvkgu'ht'eqo r ngvki 'vcum0"O cnj qtwc'uwi i guvgf 'yj cv'y j gp"
 kpf kxf wcnu'ctg'qhhgtgf "c'tgy ctf 'yj g{ 'f ggo "xcnwdrg'k'vj gp'vcpuhgtu'cp{ "pcwcnf"
 o qvxcvqp'vj g{ 'j cf "kv'c'r wtuwk'qh'öy kppki ö"qt'vj g'öf gult g'v'y kpö.'hwtvj gto qtg.'y j gp"
 vj ku'j cr r gpu'vj g'r tghgtgpeg'ku'uqrgn{ "hqt'vj g'tgrvkg'r c{ qhh'y j kej 'vki i gtu'vj g'öy kp'cv'cp{ "
 equ'v' gpw'kxk{ ö'ecwukpi 'yj go "v'p'gi ngev'vj gk'ty p'y gmdgkpi "cpf 'r qv'p'kcm{ "ecwug"j cto "
 vq'vj go ugrxgu'qt'qvj gtu0"Wr qp'tgxky kpi 'yj ku'tgugctej . 'k'y cu'f gvgto kpgf 'yj cv'o qvxcvqp"
 vj tqwi j "ecuj "cpf lqt'r tk g'kpegpvkg'r tqi tco u'o c{ "ecwug'wphxqtcdrd'gji cxkqtu'co qpi "
 r ctvkr cpw0"Hwtvj gt'tgugctej "qp'vj g'r gf qo gvg'r tqi tco u'vj cv'j cf "qhhgtgf "ecuj "cpf lqt"
 r tk g'kpegpvkgu'v'o qvxcvg'vj gk'r ctvkr cpw'y cu'f qpg'kp'qtf gt'v'f gvgto kpg'kh'vj gug"
 r tqi tco u'y gtg'ghgevkxg0""

Vj g'ghgevkxgpguu'qhh'gf qo gvg't r tqi tco u'c'b gvc/cpcn{ uku0'k'vj gk'o gvc/

cpcn{ uku'qp'vj g'ghgeu'qh'r gf qo gvgt/dcugf 'r j { ulecn'cevkxk{ "kpgtxgpkpu."Mcpj "cpf "

eqmgci wgu*422; +gzcokpgr' r g f qo gvgtr' tqi tco u'f guki pgf "vq'kpetgcug'vj g'co qwpv'qh'
 f ckn' r j { ulecn'cevkxk' 'vj cv'vj g'r ctvlekr cpvu'y gtg'cej kxkpi 0'Chgt'tgxky kpi "325'ctvleku'
 tgrv'kpi "vq'ghgevkxg'kpvgtxgpv'kqp"o gjv qf u'cpf "grko kpcv'kpi "f w r kccv'g'uwf kgu.'vj g{ 'hqwpf "
 54'uwf kgu'eqpf wevgf 'kp'vj ku'ctgc'vq'f gvgto kpg'y j cv'chge'v'vj g'kpvgtxgpv'kqp'hcw'w'gu"
 cuuqekcygf 'y kj 'r g f qo gvgtr' tqi tco u'j cf "qp'kpf kxk' wcnu'o qv'x'cv'kqp'vq'kpetgcug'vj gkt "
 r j { ulecn'cevkxk' 0'k'qtf gt'vq'dg'kpen'f gf 'kp'vj g'tgxky gf 'r g f qo gvgtr/dcugf 'r tqi tco u.'vj g"
 uwf kgu'tgxky gf 'j cf "vq'o gg'v'vj g'hqmqy kpi "etv'gtk'<C'v'hcuv'qpg'r ctvlekr cpv'i tqw 'wugf "
 r g f qo gvgtr' f ckn'.'r g f qo gvgtr'y gtg'wugf 'cu'c'o qv'x'cv'kqpcn'v'q'qnf w'kpi "vj g'kpvgtxgpv'kqp."
 ugr 'eqwpvu'y gtg'cuugu'gf 'r tg'cpf 'r quv'kpvgtxgpv'kqp kpegpv'kxg'cpf 'vj g'kpvgtxgpv'kqp' r g'kqf u'
 r'cu'gf 'cv'hcuv'6'y ggm'0'Vj g'g'xk'f gpeg'ceewo w'rcv'gf "d{ 'M'cpi "cpf 'eqmgci wgu' uwi i gu'gf "
 vj cv'vj g'wug'qh'r g f qo gvgtr' tqi tco u'j cf "c'o qf g'c'v'g'cpf 'r qu'k'k'x'g'ghge'v'q'p'vj g'kpetgcug'qh'
 r j { ulecn'cevkxk' 'kp'vj g'kpvgtxgpv'kqp'uwf kgu'0'"

Qpeg'Mcpi "cpf 'eqmgci wgu*422; +j cf "eqpf gpugf 'vj gkt 'uwf kgu.'vj g{ 'y gtg'
 ecvgi qtk' gf 'kp'v'q'pg'qh'vj tgg'ctgcu'qh'hqewu'hqt'vj gkt'o gvc/cpcn' {uku<*c+'r tqi tco u'wukpi "
 i qcn'kpvgtxgpv'kqpu'qh'kpetgcukpi 'f ckn' 'u'gr 'eqwpvu'd{ "4.222'y kj "ecuj "cpf lqt'r tk' g"
 kpegpv'kxg'qh'gt'kpi u'*d+'r tqi tco u'wukpi "i qcn'kpvgtxgpv'kqpu'hqt'kpf kxk' wcnu'vq'i gv'32.222"
 ugr u'kp'c'f'c{ 'y kj "ecuj "cpf lqt'r tk' g'kpegpv'kxg'qh'gt'kpi u.'cpf '*e+'r tqi tco u'ecvgi qtk' gf "
 w'pf gt'vj g'v'k'g'ōq'vj gtō'0'P q'ecvgi qtk'gu'y gtg'o cf g'dcugf "qp'gzcokp'kpi "vj g'ghge'v'vj g'uqekcn'
 eqo r ct'ku'q'qt'eqo r gv'k'k'x'g'ej cm'gpi gu'j cf "qp'vj g'r ctvlekr cpvu'y j gp'pq'kpegpv'kx'gu'y gtg'
 qh'gt'gf 0'C'nj qwi j "vj g'g'xk'f gpeg'qh'vj gkt 'tgxky gf "uwf kgu' uwi i gu'gf 'vj cv'r g f qo gvgtr'
 r tqi tco 'kpvgtxgpv'kqpu'j cf "cp'kpetgcukpi "ghge'v'q'p'vj g'r j { ulecn'cevkxk' 'qh'vj g'r ctvlekr cpvu."
 Mcpi "cpf 'eqmgci wgu'y gtg'wpcd'ng'vq'f gvgto kpg'y j gjv gt'vj g'i qcn'lug'w'kpi ."eqo r gv'k'k'x'g'
 ej cm'gpi g'hcw'w'gu'qt'vj g'qh'gt'kpi u'qh'kpegpv'kx'gu'y gtg'r tko ctk' 't'gur qpuk'ng'hqt "

o qvxcvki "j g'r j { ulecn'cevxkv{ 'kpetgcug't gur qpugu'kp'r ct vkr cpw0"Uko kret "q"Hquvt "cpf " eqmgci wgu"*4232+'Mcp' "cpf "eqmgci wgu'wi i guvgf "j cv'hw'j gt'tgugctej "dg"eqpf wevgf "qp" r gf qo gvt'r tqi tco u'kp'qtf gt"vq'f gvto kpg'y j lej "o qvxcvkiqpcn'cwtkdwgu'y gtg'ghgevxg0""

Ego r gvkkxg'Vj gqt { 'c'pf 'UqeknEgo r ct kuqp<Ghgev'qp'O qvxcvkiq'p'"

O qvxcvkiq"ecp'dg'f guetldgf "cu'v'j g'f tkxkpi "hqtteg'd { 'y j lej "j wo cpu'cej kxg'v'j gkt" i qcn'qt "ceeqo r rkuj "cumu"*O cnj qtc. "4232+0"kp'v'j g'Desire to Win. O cnj qtc"*4232+" o cngu'tghgt gpeg"v'j g'dqqm'The Evolution of Cooperation"d { 'Czgtqf .':3; : 6'kp'y j lej " uj g'f kueqxtgf "j cv'v'j g'o qvxcvkiq"v'eqo r gv'q'hw'p'r tqo qvgf "uwxkxkn'cpf "uweegu0"kp" cf f kxqp"v'j k'f kueqxtgf { 'O cnj qtc'y cu'cdng"v'f gvto kpg'y cv'eqo r gvkkxg'dgj cxkqtu'o c { " cnuq'dg'r tko ctkn{ 't gur qpukdng'hqt'etgcvki "xcnw0"Vj g'o clqtkv{ "qh'v'j g'hkgtcwtg'tgxky gf " qp"eqo r gvkkxg'p'wi i guvgf "j cv'eqo r gvkkxg'j cf "c'f k gev'ghgev'qp'cp'lpf kxf wcnu" o qvxcvkiq"cpf "j cv'y j gp"c"eqo r gvkkxg'y cu'cf o kpkvgtgf "kp'v'j g'qr vko cn'gpv'k'qpo gpv.'k' uj qy gf "j cv'o qvxcvkiq'kpetgcugf 0"Tuwmu'wi i guvgf "j cv'eqo r gvkkxg'j cf "j g'r qv'p'kcn' v'kpetgcug'o qvxcvkiq'kp"c'xctkv{ "qh'ugv'kpi u'cpf "j cv'q'hw'kpi "ecuj "cpf k'p'r tk'g" kpegpv'xgu'o c { 'pqv'dg'pgeguuct { "v'o qvxcvkiq'lpf kxf wcnu0"kp'qtf gt"vq'ghgevxgn{ " cf o kpkvgt"c"eqo r gvkkxg'ej cngpi g'wukpi "c'r gf qo gvt'r tqi tco . "xctkqu'f { pco leu'qh" eqo r gvkkxg'cpf "o qvxcvkiqpcn'tgugctej "y gtg'v'j g'pgz v'ctgcu'qh'hkgtcwtg'tgxky gf "kp'qtf gt" v'f gvto kpg'dgu'r tcevegu'cu'tgr'v'xg'v'q'o qvxcvkiq0'

Vj g'N-ghgev<Uwf { 'f gvku'c'pf 't guwmu0'kp'I ctek"cpf "Vqt'v'422; +'uwf { "qp" v'j g'N/ghgev'cpf "j g'v'j gqt { "qh'wukpi "eqo r gvkkxg'o qvxcvkiq'kp'ku'qr vko cn'gpv'k'qpo gpv." egtv'k'p'nggo gpv'y gtg'uj qy p"v'uki p'k'hecpv{ 'kpetgcug'cp'lpf kxf wcnu'eqo r gvkkxg" o qvxcvkiq0'I ctek"cpf "Vqt"o qf gngf "j gkt'tgugctej "f guki p'ctqwpf "Hguv'kpi gt'v'j gqt { "qp" uqekn'eqo r ct kuqp0"Hguv'kpi gt'v'j gqt { 'y cu'v'j cv'j wo cpu'r quuguvgf "c'f tkxg'hqt'ugrh'

gxcnvcvq0"J g'ucvqf "vj cv'qpg'eqwf "ngctp'cdqvw'vj gk "cdkklkgu"cpf "cvkwf gu'd { "eqo r ctkpi " vj go ugrkgu'y kj "qvj gtu'cpf "vj cv'r gqr ng. "kp'i gpgtcn'o quvf { "uggm'vq'eqo r ctg'vj go ugrkgu" y kj "uqo gqpg'j cxkpi "tgcupcdrg'uko kctkkgu"*Hguvki gt."3; 76+0"kp'cf f kklq'vq'vj ku."

Hguvki gt'ucvqf "vj cv'kh'vj gtg'y gtg'pq'kpf kxf wcu'r tgugpv'j cxkpi "tgcupcdrg'uko kctkkgu=" eqo r ctkuqu'y qwf "ukm'dg'o cf g'vq'cp { qpg'r tgugpv'cv'vj g'vko g'qh'eqo r ctkuqu0'I ctek" cpf "Vqt"*422; +j { r qvj guk gf "vj cv'kpf kxf wcu'y qwf "pqv'dg'lpenkpgf "vq'eqo r ctg" vj go ugrkgu'y j gp'vj g'i tqw "uk'g'y cu'rcti g."qr r qukpi "y j cv'Hguvki gt'j cf "uwi i guvgf "cdqvw" uqekn'eqo r ctkuqu0"Wr qp'tgxky kpi "I ctek"cpf "Vqt'u'uwf { "cpf "vj g'hkpf kpi u'qh" Hguvki gt'u'vj gqt { "qh'uqekn'eqo r ctkuqu."uwducpv'kcn'gkxf gpeg'uwi i guvgf "vj cv'eqo r ctkpi " qpgugrh'uqekm { "qt'gpi ci kpi "kp'eqo r gvklq'j cf "xct { kpi "ghgeu"qp'vj g'o qvxcv'kpcn'ngxgn' qh'vj qug'gpi ci gf."cpf "hwt'vj gto qtg."vj gug'o qvxcv'kpcn'ngxgn'y gtg'f gvgto kpgf "d { "vj g'v'r g" qh'eqo r gvklq' "dgkpi "eqpf wvqf 0""

Cmj qwi j "I ctek"cpf "Vqt"*422; +ci tggf "y kj "Hguvki gt"*3; 76+"qp'j ku'hkpf kpi u'cu" vj g { "tgrvqf "vq'uqekn'eqo r ctkuqu'dgkpi "o cf g'vq'vj qug'j cxg'tgcupcdrg'uko kctkkgu."vj g { " j { r qvj guk gf "vj cv'vj g'qr r qukv'y qwf "j cr r gp'cu'i tqw "uk'g'kpetgcugf 0"Ur gekh'kpf kpi u' qh'I ctek"cpf "Vqt'uj qy gf "vj cv'cp'kpetgcug'o qvxcv'kpcn'ghgeu'qewt'gf "y j gp'kpf kxf wcu" y gtg'r megf "kp'uo cmgt'i tqw u'qh'gs wcn'cdkklv { "cpf "c'f getgcugf "o qvxcv'kpcn'ghgeu" qewt'gf "y j gp'kpf kxf wcu'y gtg'r megf "kp'v'rci g'i tqw u'qh'gs wcn'cdkklv { 0"Vj g { "vgto gf " vj ku'eqpegr v'vj g"N/ghgeu0"

Study details: The N-effect. Vj g'r ctvkr cpw'kp'I ctek"cpf "Vqt'u"*422; +uwf kgu" y gtg'i kxgp'uwtxg { u'vj cv'kpenf gf "c'ugt'kgu'qh'tj gvqtkcni's wguv'kpu'tgrvqf "vq'i tqw "uk'g" ghgeu'vj j gp'gzco kplpi <ghqt'v'gzgtv'gf "qt'o qvxcv'kq."eqo r gvklq'g'ggkpi u."uqekn' eqo r ctkuqu."cpf "vj g'ghgeu'qh'uqekn'eqo r ctkuqu"qp'eqo r gvklq'g'o qvxcv'kq0"Qh'vj g"

xctkqwu'uwtxg{ u'f qpg. "cm] cf 'uko kct 't guwmu0'kp'qpg'uwtxg{ "eqpf wevgf . 'kpf kxf wcu'y gtg"
 cunfg "cdqw'vj g'co qwpv'qh'ghqt v'vj g{ 'y qwf "gzgt v'y j gp'twppkpi "c'7/M'tceg'ci ckpu'gkj gt"
 72"qt'722'r ctvkr cpw0'T guwmu'awi i guvgf 'vj cv'y j gp'i kxgp'vj g'ej qleg. 'kpf kxf wcu"
 r ctvkr cvkpi 'kp'vj g'uo cmgt 'i tqwr "*72+y qwf "gzgt v'o qtg'ghqt v'vj cp'kp'vj g'rti gt' i tqwr "
 *722+*I ctek"("Vqt."422; +0"kp'cpqj gt'uwtxg{ . 's wgu'kqpu'y gtg'cunfg 'tgrcvgf "v'vj g'pcwtg"
 qh'eqo r gkxg'hggnkpi u'r ctvkr cpw'y qwf 'j cxg'vqy ctf u'qy gt'kpvgtxky ggu'f gr gpf kpi "qp"
 vj g'co qwpv'qh'kpvgtxky ggu'vj g{ 'y qwf "dg'eqo r gv'kpi "ci ckpu'ht'vj g'uco g'f guktgf "
 r qukkqp0'I ctek'cpf "Vqt'f gvto kpgf 'vj cv'eqo r gkxg'hggnkpi u'f getgcugf "cu'vj g'pwo dgt"
 qh'kpvgtxky ggu'kpetgcugf 0"kp'I ctek'cpf "Vqt'au'kpcn'uwtxg{ . 'r ctvkr cpw'y gtg'cunfg "
 s wgu'kqpu'cdqw'wukpi "Hceg'qqm'v'ceewo wcv'vj g'o quv'co qwpv'qh'ht'kpf u'cpf "v'qr 'vj cv'
 vj g'y kppgt 'y qwf "dg'i kxgp'c'r tk g0'Cff kkkpcmf . 'vj g{ 'y gtg'v'qr 'vj cv'vj g'eqo r gkxgp'r qqr'
 y qwf "dg'gkj gt'32"qt'32.222'cpf 'vj qug'kpkuj kpi "cv'qr 'y qwf 'i gv'vj g'r tk g0'Vj g{ 'y gtg'
 cunfg "v'y j cv'gzv'vj g{ 'y qwf "dg'o qv'xcv'gf "v'eqo r gv'v'q'y kp'vj g'r tk g. "v'y j cv'gzv'p'
 vj g{ 'y qwf "dg'kpenkpgf "v'eqo r ctg'vj gk'qy p'r tqi tguu'v'eqo r gv'kqt'au'r tqi tguu'kp'dqy "
 ukwcv'kqpu.'cpf 'kpcmf "v'y j cv'gzv'p'vj g{ 'hgn'k'y qwf "dg'gcu{ "v'y kp'vj g'ecuj 'r tk g0'Vj g"
 eqpenwukqpu'dcugf "qp'vj g'tguwmu'qh'vj g'uwtxg{ 'y gtg'vj cv'kpf kxf wcu'<*c'+y gtg'o qtg"
 o qv'xcv'gf "v'eqo r gv'ci ckpu'32/eqo r gv'kqtu'tcvj gt'vj cp'32.222/eqo r gv'kqtu."*d'+y gtg"
 o qtg'kpenkpgf "v'eqo r ctg'vj gk'qy p'r tqi tguu'ci ckpu'32/eqo r gv'kqtu'tcvj gt'vj cp'32.222/
 eqo r gv'kqtu'eqpf kkkp.'cpf "*e'+vj cv'kpf kxf wcu'hgn'o qtg'hkgn{ "v'y kp'kp'vj g'32/
 eqo r gv'kqtu'eqpf kkkp'vj cp'kp'vj g'32.222/eqo r gv'kqtu'eqpf kkkp"*I ctek"("Vqt."422; +0""

Analyzing the results: The N-effect. "I ctek'cpf "Vqt"*422; +d'gkxgf "vj cv'vj gk"
 kpf kpi u'qp'vj g'N/ghge'qr r qugf 'Hgu'kpi g'au'kpf kpi u'qp'rti g'i tqwr "eqo r ctku'pu'dgkpi "
 o cf g=j qy gxgt."I ctek'cpf "Vqt'f kf 'pqv'v'gu'vj g'rti g'i tqwr "eqo r ctku'p'vj gqt { 'cu'vj g{ 'f kf "

pqv'qhgt "cp { "j { r qvj gwecniukwcvkpu'lp'y j lej "vj g"qr vkp'hqt "uqekneqo r ctluqp"
 *eqo r gwvkqp+"y cu'gkj gt "c'rci g'i tqwr "ugwki "qt "pqv'dgkpi "cdng"vq"uqekcm{ "eqo r ctg"
 *eqo r gwv+"cv'cm0"kpugcf "vj g{ "r tqxkf gf "s wgvkpu'vj cv'cmjy gf "tgr qpf gpw'vq"gvko cvg"
 vj gk "ghqtu'dcugf "qp"vj g'i tqwr "uk g0"Hwvj gt "no kcvkpu'tgi ctf kpi "vj g"N/ghgev'y gtg'vj cv"
 I ctek"cpf "Vqt"*422; +"wugf "j { r qvj gwecni's wgvkpu'lp'vj g'hqto "qh'uwxg{u'cpf "f kf "pqv"
 gzco kpg'vj g'cewcn'ghgev'uqekneqo r ctluqp"qt"eqo r gwvkxg'o qvxcvkqp"eqwf "j cxg'qp"
 kpetgculpi "o qvxcvkqp'tgrvzf "vq"vcun'eqo r rgvkqp"qt"o qvxcvkqpcn'ghqt'v'gz gt vgf "f wtkpi "
 cewcn'cevxk{0""

Cmj qwi j "I ctek"cpf "Vqt'u'uwf { "j cf "no kcvkpu."vj gk "hkf kpi u'tgrvzf "vq"vj g"N-
 ghgev*I ctek"("Vqt."422; +"cmjpi "y kj "Hgvkpi gt'u"*3; 76+"vj gqt { "qp"uqekneqo r ctluqp"
 r tqxkf gf "xcn'cdng'tguwu."uwi i gvki "vj cv'eqo r gwvkqp"cpf "uqekneqo r ctcvxg'hcevqu'f kf"
 j cxg'cp'ghgev'qp"cp'kpf kxf wcn'u"o qvxcvkqp"lp"cxctkv{ "ugwki u0"Vj g'uwf lgu'f qpg'qp"vj g"
 N-ghgevcpf "uqekneqo r ctluqp"vj gqt { "uwi i gvzf "vj cv'vj g'kpkcvkqp"qh'c"eqo r gwvkxg'gxgpv'
 lp"cxctkv{ "qh'j gcf "vq"j gcf "qt"lpf kxf wcn'ugwki u'y qwf "tguwn'y kj "vj g'r ctvek cpv"
 gZR gt kpeki "cpf "kpetgcug'lp"vj gk "o qvxcvkqpcn'rgxgn0"Chgt "f gyto kpi "vj gtg'y cu'cp"
 kpetgcugf "o qvxcvkqpcn'ghgev'tki i gtgf "d { "j gcf "vq"j gcf "eqo r gwvkqp."vj g'pgz v'ctgc"qh"
 tgugctej "gzco kpgf "vj g'ghgev'qh'ovgco o'qt"kvgti tqwr "vj gqt { "cpf "vj g'ghgev'k'j cf "qp"cp"
 kpf kxf wcn'u"o qvxcvkqp"rgxgn"gpq { o gpv'cpf "f guk gf "qweqo gu0""

Kpvgti tqwr 'eqo r gwvkqp<O gvc/cpcn' ugu0'lp"cxctkv{ "u'uwf { "eqpf wevzf "d { "Cmgp"cpf "
 J gej v*4226+"vj g{ "cpcn{| gf "vj g'eqphkcvkpi "xky u'cuuqekvzf "y kj "vgco "ghgevxgpgui'cpf "
 vj g'gpvj wukuo "hqt"vgco u0"kp'vj gk "o gvc/cpcn{uku'vj g{ "cpcn{| gf "vj g'ghgevu'qh'vgco /dcugf "
 *kvgti tqwr +"y qtn'uwi i gvki "vj cv'o cp { "uwf lgu'r tqxkf gf "gxkf gpeg'uw r qtkpi "gkj gt"
 r qukxg"qt "pgi cvxg"cur geu'cuuqekvzf "y kj "vj g'f { pco leu'qh'kvgti tqwr "y qtn0"Cmgp"cpf "

J gej v'ui i guvgf "vj cv'kpvgti tqwr "y qtnlr tqxkf gf "eqo r gvpeg/gpj cpekpi "qr r qtwpkkgu"
 cmppi "y kj "uqekcn/go qv'kpcn'cpf "eqo r gvpeg/tgrv'gf "dgpghku0"Hwtvj gt'hkpf kpi u'qh'vj gk"
 tgugctej "ui i guvgf "vj cv'dgmppi kpi "vq'cpf "r ctv'ekr cvkpi "kp"i tqwr u."eqwrf "gpj cpeg"eqtg"
 hggkpi u'qh'ghhece { "cpf "eqphk'f gpeg0"Cmnp"cpf "J gej vu'tgugctej "j cf "hko kcv'kpu'cu'vj g"
 r ctv'ekr cpw'kpxqrgf "kp'vj gk'tgugctej "y gtg'r tko ctkn' "vj qug'go r m' { gf "kp'vj g'dwukpguu"
 ugwkpi "cpf "vj g'kpvgtxgp'kpu'y gtg'dcugf "uqrgn' { "qp'vj g'eqo r ngv'kq'qh'r tq'lgew'cpf lqt"
 r tgugpv'kpu'cr r r'ecdn'v'q'vj gk'hkgrf 0"tgugctej gtu'kp'qvj gt'hkgrf u'j cxg'eqpf wevgf "o gvc/
 cpcn' { ugu'uko krc' "vq' "Cmnp"cpf "J gej vu'v'q'f gvgt'o kpg'vj g'ghge'v'kpvgti tqwr "r ctv'ekr cvkq"
 y qwrf "j cxg'qp'vj g'f guk'gf "qweqo gu0""

Vcwt'cpf "J ctcentgy kel "4226+"o wej "hkn' "Cmnp"cpf "J gej v'4226+"ui i guvgf "
 vj cv'kp'qtf gt "vq'etgc'v'qr vko cno qv'kcv'kq. "dqj "eqqr gtcv'kxg'cpf "eqo r gv'kxg'vj gqt { "
 uj qwrf "dg'cr r r'kgrf 0"Qvj gt'tgugctej gtu'eqo kpi "vq'uko krc' "eqpenwukpu'kpen'f gf "Uc'ppg."
 Lqj puqp'F 0'Y . "cpf "Lqj puqp"*3; ; ; + "kp'vj g'o gvc/cpcn' { uku'vj g' { "eqpf wevgf . "eqo r ctkpi "vj g"
 ghge'w'qh'eqqr gtcv'kxg. "eqo r gv'kq. "cpf lqt'kpf k'k'f wcn'i qcn'utwewt'gu'qp'o qv'q/
 r gthqto cpeg'vcum'0"kp'vj g'86'uwf kgu'vj g' { "gzco kpgf "vj g' { "eco g'v'q'vj g'f gvgt'o kpcv'kq'vj cv'
 eqqr gtcv'kq' "hgf "vq'j ki j gt'ngx'gnu'qh'r gthqto cpeg'vj cp'vj g'kpf k'k'f wcn'eqo r gv'kxg"
 eqpf k'k'qpu'f k'f 0"Vj ku'kpf k'ecv'gf "vj cv'eqqr gtcv'kq'j cf "r qv'gp'v'cn'r qu'k'k'g'qweqo gu0"Vj ku"
 y cu'vj g'dcuku'ht' "Vcwt'cpf "J ctcentgy kel u'hw'vj gt'gzco kpcv'kq'kp'v'q'vj g'v'y q'f { pco kcu'qh'
 eqqr gtcv'kq'cpf "eqo r gv'kq'vj g'ghge'v'vj g' { "j cf "y j gp'wugf "kp'eqo dkpcv'kq'0""

Study Details: Intergroup competition. Vcwt'cpf "J ctcentgy kel "4226+"
 eqpf wevgf "hqw'uwf kgu'cpf "f k' "c"o gvc/cpcn' { uku'qh'vj gk'uwf kgu'v'q'f gvgt'o kpg'vj g"
 ghge'v'kpguu'qh'kpvgti tqwr "eqo r gv'kq. "r wtg'eqo r gv'kq'cpf "r wtg'eqqr gtcv'kq'qp'vcum'
 gplq' { o gp'v'cpf "r gthqto cpeg'0"kp'vj g'htu'uwf { "eqpf wevgf "d' { "Vcwt'cpf "J ctcentgy kel "

vj g{ 'hqwugf "qp'vcum'r gthqto cpeg'd{ 'j cxkpi '58'dq{ u'r ctvkr cvg'lp'uj qqvpi '42'htgg/
 vj tqy u'lxqrxkpi "xctkqu'eqpf kxqpcn'lugwpi u0"Vj g'dq{ u'y gtg'r rægf "lpvq"qpg'qh'vj tgg"
 i tqwr u'cpf "i kxgp"qpg'qh'vj g'hqmty kpi "eqpf kxqpu'Eqpf kxqp"qpg/r vtg'eqqr gtcvqp'lp"
 y j lej 'y q"dq{ u'y gtg'r cktgf "vqi gvj gt'cpf "kputwvvgf "vq'bo cng'c'egt vcp'pwo dgt'qh'dcungu"
 vqi gvj gt."eqpf kxqp"4/r vtg'eqo r gvkkqp'lp'y j lej "gcej "dq{ 'y cu'i kxgp'vj g'i qcn'vq'ueqtg"
 o qtg'htgg/vj tqy u'vj cp'vj gk"qr r qpgpv"qt"eqpf kxqp"5/lpvti tqwr "eqo r gvkkqp'lp'y j lej "y q"
 dq{ u'hqto gf "c'vgo "cpf 'y gtg'i kxgp'vj g'i qcn'qh'ueqtkpi "o qtg'dcungu'vj cp'cpqy gt'vy q/
 r gtuqp'vgo 0"Vj g'tguwu'qh'vj gk'hpf kpi u'y gtg'vj cv'r ctvkr cpv'lp'vj g'lpvti tqwr "
 eqo r gvkkqp"o cf g'uki pkkcpv" "o qtg'htgg'vj tqy u'cpf "j cf "j ki j gt'hxgn'qh'vcum'gplq{ o gpv'
 vj gp'vj g'r ctvkr cpv'lp'vj g'r vtg'eqo r gvkkqp"qt'r vtg'eqqr gtcvqp"i tqwr "Vcwt"("
 J ctcentgy le| .r 0: 74+0"Vcwt"cpf "J ctcentgy le| "f gekf gf "vq'eqpf wv'c'uko kct'uwf { 'y kj "
 cp'kpetgcugf "uco r ng'uk g'cpf "ci g'tcpi g. "lp'cf f kxqp"vq"o cnkpi "o qf hkecvqpu"vq'vj gk"
 i tqwr u'cpf "uwf { "f guki p0

Vj g'ugeqpf "uwf { "eqpf wvvgf "d{ "Vcwt"cpf "J ctcentgy le| "4226+'y cu'eqpf wvvgf "
 wpf gt'vj g'uco g'dcule" f guki p'wugf "lp'vj gk'htuv'uwf { "gzegr v'vj g{ 'kpetgcugf 'vj gk'uco r ng"
 uk g'vq"333"dq{ u'cpf "eqpf wvvgf "vj gk'uwf { "hqt"vy q'f c{ u0"Vj g'htuv'f c{ "qh'vj gk'uwf { 'y cu"
 wugf "vq'eqmgev'dcugrkg" f cvc'y j kg'vj g'ugeqpf "f c{ 'y cu'hqt'lpkkcvkpi "vj g'lpvgtxgpvqp"cpf "
 eqmgev'kpi "f cvc0"Qp'vj g'htuv'f c{ "qh'vj g'uwf { "vj g'dq{ u'y gtg'kputwvvgf "vq'uj qqv"32'htgg"
 vj tqy u. 'vj ku'f cvc'y cu'vj gp'wugf "cu'c'dcugrkg"o gcuwtg'hqt"gej "r ctvkr cpv0"Qp'vj g'ugeqpf "
 f c{ "qh'vj g'uwf { . 'vj g'dq{ u'y gtg'tcpg qo n{ "r rægf "lpvq"qpg'qh'hqwt"eqpf kxqpu'vtg"
 eqqr gtcvqp. "r vtg'eqo r gvkkqp"qt'lpvti tqwr "eqo r gvkkqp"cpf "c'hqwtvj "eqpf kxqp."
 kpf kxkf wen'i qcn0"Vj g'eqpf kxqpu'qh'vj g'htuv'vj tgg'i tqwr u'y qwf "dg'vj g'uco g'cu'uwf { "qpg=" "
 qpn{ 'tcvj gt'vj cp'uj qqvpi "42'htgg/vj tqy u."32'y gtg'uj qv0"lp'vj g'hqwtvj "eqpf kxqp"qh"

cpf "J ctcentgy kel 'r tqxkf gf "uwducpkcn'gxf gpeg'vj cv'lpvgti tqwr "eqo r gvkxqp'r tqf wegf "
 hexqtdng'tguwmu0'Hwtvj gto qtg.'vj g'tgugctej "uwi i guvgf 'vj cv'wukpi 'lpvgti tqwr "eqo r gvkxqp"
 vki i gtgf "eqqr gtcvqp'y kj kp'vj g'i tqwr "cpf "cnuq'lpetgcugf "vj g'o qvxcvqpcn'rgxgn'qh'vj g"
 kpf kxf wcnu'lp'vj g'i tqwr 0"F gvto kpkpi 'vj g'o quv'ghgevkxg'y c { "vq'lpetgcug'b qvxcvqp'hqt "
 lpvgti tqwr "qt'vgco "eqo r gvkxqp'u'y cu'gzco kpgf "kp'hwtvj gt'f gvckn'vq'f gvto kpg'dguv'
 r tcevegu0'

Vj g'ghgev'qhl'lpvgtf gr gpf gpeg'qp'lpf kxf wcnu qvxcvqp0'Ucppg.'Lqj puqp.'cpf "

Lqj puqp"*3; ; ; +'eqpf wevgf 'tuguctej "qp'vj g'ghgev'lpvgt/i tqwr "eqo r gvkxqp'cpf "eqqr gtcvqp"
 j cf "qp'cp'lpf kxf wcnu'o qvxcvqp'vq'eqo r gvgo"Uqekn'lpvgtf gr gpf gpeg'gzkuu'y j gp "
 kpf kxf wcnu'uj ctg'eqo o qp'i qcnu'cpf "gcej "kpf kxf wcnu'qweqo gu'ctg'chgevgf "d{ 'vj g"
 cevqpu'qh'qj gtu"*Ucppg'gv'cr0"3; ; ; 'r 056+0"Ceeqtf kpi "vq'Ucppg'cpf "eqmgei wgu"*3; ; ; +"
 y kj kp'eqqr gtcvkg'ukwcvqpu.'kpf kxf wcnu'uggn'qweqo gu'vj cv'ctg'dgpghekn'vq'vj go ugrxgu"
 cpf "dgpghlekn'vq'cm'qj gt'i tqwr "o go dgtu0"Cff kxqpcn'tgugctej "f qp'lp'vj g'ctgc'qh"
 kpf kxf wcnu'cpf 'vgco "o qvxcvqp'hqewugf "qp'vj g'ghgev'eqqr gtcvqp"j cf "qp'eqo r gvkxqp0""

Kp'vj g'ctveng'tgxky gf "d{ 'Dct/[co "4225+'tgrcvgf "vq'eqo r ngz'ur qt'v'u'vgo u'cpf "
 vj g'ghgevkxgpguu'qh'vgco u.'Dct/[co "f kuewugu'F cty kpu'kf gcu'cpf "vj g'uwf { "qh'gxqmwkqp."
 rtko ctkn' 'hqewulpi "qp'eqo r gvkxqp'dgkpi "vj g'f tkxkpi "hqteg'qh'gxqmwkqpct { "ej cpi g0"Dct/
 [co "4225+'uwi i guvgf 'vj cv'y j gp'kpf kxf wcnu'qp'c'vgco "eqqr gtcvgf "vj g{ 'y qwf "cnuq"
 eqo r gv'gdwgt'cu'c'vgco 0'Hwtvj gto qtg.'y j gp'c'vgco "eqo r gvgu.'kv'o qvxcvqu'vj g"
 kpf kxf wcnu'f gukt'g'vq'eqqr gtcvg'y kj "qj gt'vgco "o go dgtu0"Vj g'kpf kpi u'qh'Dct/[co "
 *4225+'tgrcvgf "vq'vgco "f { pco leu'chgevkpi "eqo r gvkxg'o qvxcvqp'ucvg'vj g'hqmjy kpi <
 0Y j gp'vgco u'eqo r gv'g'vj ku'o qvxcvqu'vj g'eqqr gtcvqp'dgy ggp'r m { gtu0"Y g'ugg'vj cv'vj gtg"
 ku'c'r qukkxg'qt'eqputwevkxg'tgrcvqpuj kr "dgy ggp'eqqr gtcvqp'cpf "eqo r gvkxqp'y j gp'vj g{"

xqnxo g'cpf "dg'wugf "v'f gvgto kpg'kpvpuksku'qh'cevxk{\o"*r 0632+0"kp'c'uwf { "eqpf wevgf " d {"Vwf qt/Nqeng'cpf "j ku'eqmgci wgu"*4233+"vj g {"f luewu'j qy "vj g'P cvkqpcn'J gcmj "cpf " P wtkkqp'Gzco kpcvqp'Uwxg {"*P J CP GU+"j cf "uvtvgf "wukpi 'r gf qo gvgtu'v'ces vkt g'htgg/ rlxkpi 'r j { ulecn'cevxk{\ "dgj cxkqtu.'y j lej "o cf g'vj go "vj g'rti gu'cpf "qpn{\ 'pcvqpcm{\ " tgr tgugpvxg'uwxg {"kp'vj g'Wpkgf "Ucvgu'v'j cxg'cf qr vgf "c'y c {"v'q'o gcuwtg'qdlgevxg" r j { ulecn'cevxk{\ 0"K'y cu'vj g'i qcn'qh'Vwf qt/Nqeng"("Dcuugv"*4226+"v'v'c'purcvg'uvg' u'vcngp" y j gp'wukpi "c'r gf qo gvg'kpv'r j { ulecn'cevxk{\ "ew'r qkpvu'ht'j gcmj { "cf wmu0""

J cxkpi "vj g'cdkxk{\ "v'r meg'cf wmu'kpv'i tqw u'qh'gs wcn'cdkxk{\ "cmqy u'ht'cp" qr vko cn'gpxkqpo gp'v'lp'y j lej "j ki j gt'rgxgnu'qh'o qvxcvqp'v'eqo r gv'eqwf "dg'gzj kdkgf 0' Rceki 'kpf kxf wcn'kpv'i tqw u'qh'gs wcn'cdkxk{\ "qt'r j { ulecn'cevxk{\ "rgxgnu'y cu'f gvgto kpgf " v'gd'g'o quv'ghgevxg'y j gp'v'ki i gt'kpi "o qvxcvqp'v'eqo r gv'*I ctekc"("Vqt."422; +0" Vtcurvki "vj g'uvg' u'cp'kpf kxf wcn'j cu'vcngp'kpv'c'r j { ulecn'cevxk{\ "qt'öcdkxk{\ ö" i tqw kpi u'j cu'dggp'tgugctej gf "d {"Vwf qt/Nqeng'cpf "Dcuugw"*4226+0"kp'vj g'uwf { " eqpf wevgf "d {"Vwf qt/Nqeng'cpf "Dcuugw"*4226+"vj g {"eqpenmf gf "vj cv'f ckn{\ "uvg' u'vcngp" eqwf "dg'v'c'purcvf "kpv'vj g'htmqy kpi "cevxk{\ "rgxgnu"<*"c'+ugf gpvct { ? Ngu'vj cp'7.222'uvg' u" r gt'f c {"*d+'mqy "cevxk{\ ?7.222/9.6; ; "uvg' u'r gt'f c {"*e+'uqo gy j cv'cevxg?9.722/; .; ; ; " uvg' u'r gt'f c {"*f '+cevxg?32.222/34.6; ; "uvg' u'r gt'f c {"cpf "*"g+'j ki j n{\ "cevxg?i tgcvt'vj cp" 34.722'uvg' u'r gt'f c {"*r 03+0"Vj ku'uwf {"r tqxkf gf "qpg'vj g'cdkxk{\ "v'eqpxgt'vj g'r gf qo gvgt" uvg' u'vcngp"d {"cp'kpf kxf wcn'cpf "r meg'vj go "kpv'c'ur gekke'rgxgn'qt'ecvgi qt {"qh' cevxk{\ lcdkxk{\ 0"K r ngo gpvcvqp'qh'c'eqo r gv'kxg'ej cmgpi g'lp'y j lej "r ctv'ekr cpw'y gtg" eqo r gv'kpi "co qpi "qt'y kj lp'c'uo cmgt"i tqw "qh'gs wcn'cdkxk{\ "eqwf "dg'eqpf wevgf "dcugf "qp" vj g'hkpf kpi u'qh'Vwf qt/Nqeng'cpf "Dcuugv"*4226+" "

Uwo o ct{ "

Vj gtg'ku'uwducpvkn'gxf gpeg'vj cv'cf wnu'hkxkpi 'kp'vj g'Wpkxgf 'Ucvgu'ctg'pqv'i gwkpi "

vj g'tgeqo o gpf gf 'co qwpv'qh'r j { ulecn'cevxkx\ 'pggf gf 'vq'cej kxg'vj g'cuuqekcvf 'j gcmj "

dgpghku*PEJ U."422: =WUF J J U."422: =Y ETHIC KET."422; +0"kp'qtf gt 'vq'ghgevxkxgn\ "

o qvxcvg'cf wnu'vq'kpetgcug'vj g'co qwpv'qh'r j { ulecn'cevxkx\ 'vj g{ 'ctg'i gwkpi .xctkquu"

r gf qo gvgt'r tqi tco u.'vj gqtkgu'tgrv'v'vq'o qvxcv'kqpcn'eqpvtkdwaqtu*kpemf kpi 'uqekcn"

eqo r ctluqp'cpf 'eqo r gvkkxg'vj ggt { + 'cpf "o gj qf u'hqt'i tqw kpi 'vq'etgcvg'qr vko cn"

gpxkqpo gpvu'y gtg'gzco kpgf 'kp'f gvckf"Rgf qo gvgt'r tqi tco 'tgugctej gtu'j cxg'dggp'wpcdrj"

vq'f gvgto kpg'hi'vj g'eqo r gvkkxg'ej cmgpi g'hgcwtgu'qt'vj g'kpegpvxgu'qhhtgf "o qvxcv'v' "

r ctv'ekr cpw*Hquvgt'gv'cnf"4232=Mcp' 'gv'cnf"422; =XcpY qto gt'gv'cnf"4228+0"Hwtvj gt"

hpf kpi u'wui i gungf 'vj cv'kpegpvxgu'o c { 'pqv'dg'pgeguuct { 'vq'vki i gt'o qvxcv'kqpcn' "Hquvgt'gv'

cnf"4232+0"Vj g'eqo r kv'kq'qh'tgugctej 'wui i gungf 'vj cv'dqj 'kpf kxk' wcn'cpf 'v'gco "

eqo r gvkkq'j cf "c'r qukkxg'ghge'v'q'cp'kpf kxk' wcn'u'o qvxcv'kqpcn'."j qy gxgt.'tgugctej "j cu"

pqv'dggp'f qpg'qp'vj g'ghge'v'vj g{ 'j cxg'qp'cp'kpf kxk' wcn'u'o qvxcv'kqpcn'y j gp'ko r ngo gpv'v' 'kp'

r gf qo gvgt'r tqi tco u'vj cv'f q'pqv'qhht"ecuj "cpf lqt'r tk' g'kpegpvxgu'

Vj g'eqpemukapu'o cf g'wr qp'tgxkgy kpi 'vj g'tgrv'v'v' 'tgugctej "ngf 'vq'vj g'hqmqy kpi "

pwn'j { r qj gugu<

*3+P wniJ { r qj guku<Vj gtg'y km'dg'pq'uki p'k'ecp'v'f k'htgpeg'kp'vj g'co qwpv'qh'v'qcn'

uvg' u'v'cn'gp'd { 'kpf kxk' wcn'vj cv'r ctv'ekr cvf 'kp'r gf qo gvgt'r tqi tco 'y j gp"

eqo r gvkkxg'kpegpvxgu'y gtg'wugf 'xgtugu'vj g'co qwpv'qh'v'qcn'uvg' u'v'cn'gp'd { 'vj g'

r ctv'ekr cpw'y j gp'pq'eqo r gvkkxg'kpegpvxgu'y gtg'wugf 0'

*4+P wniJ { r qj guku<Vj gtg'y km'dg'pq'uki p'k'ecp'v'f k'htgpeg'kp'vj g'co qwpv'qh'uvg' u'

v'cn'gp'd { 'vj g'r ctv'ekr cpw'y j gp'vj g{ 'y gtg'gpi ci gf 'kp'uo cm'i tqw u'qh'gs wcn'cdkx\ "

*: +P wniJ { r qvj guku<"kp"vj g"gzr gtlo gpvni tqr "vj gtg'y kn'dg'pq'uki pkllecpv'f khtgpeg"
 kp"vj g"co qwpv'qh'dcugrkg'uigr u'vcngp"d{ 'r ctvlekr cpw'u'xgtugu'vj g"co qwpv'qh'uigr u"
 vcngp'y j gp'uo cni tqr u'qh'gs wcn'cdkxv{ 'y gtg'wugf "cu'eqo r gvkkxg'kpegvkg"cpf "
 ecuj "cpf lqt'r tk g'kpegvkgu'y gtg'pqv'qhhtgf 0"

*: +P wniJ { r qvj guku<"kp"vj g"gzr gtlo gpvni tqr "vj gtg'y kn'dg'pq'uki pkllecpv'f khtgpeg"
 kp"vj g"co qwpv'qh'dcugrkg'uigr u'vcngp"d{ 'r ctvlekr cpw'u'xgtugu'vj g"co qwpv'qh'uigr u"
 vcngp'y j gp'kpvgti tqr u'y gtg'wugf "cu'eqo r gvkkxg'kpegvkg"cpf "ecuj "cpf lqt'r tk g"
 kpegvkgu'y gtg'pqv'qhhtgf 0"

*32:P wniJ { r qvj guku<"kp"vj g"gzr gtlo gpvni tqr "vj gtg'y kn'dg'pq'uki pkllecpv"
 f khtgpeg'kp"vj g"co qwpv'qh'dcugrkg'uigr u'vcngp"d{ 'vj g'r ctvlekr cpw'u'xgtugu'vj g"
 co qwpv'qh'uigr u'vcngp'y j gp'qpg'rti g'i tqr "eqo r gvkkqp'y cu'wugf "cu'eqo r gvkkxg"
 kpegvkg"cpf "ecuj "cpf lqt'r tk g'kpegvkgu'y gtg'pqv'qhhtgf 0""

"
 "
 "
 "
 "
 "
 "
 "
 "

"
 "

r gf qo gvtu'y kj 'vj gk'eqttgur qpf kpi 'qprkpg'ceeqwpv0"Qpeg'vj gk'f cxc'j cf "dggp'eqmgevff "
 cpf "cpn{| gf 'r ctvlekr cpw'y gtg'r rnegf 'kpv'gkj gt'vj g'eqvtqni tqwr "qh'vj g'gZR gtlo gpvni'
 i tqwr 0""

I tqwr 'r rnego gpv<GZR gtlo gpvniqt 'eqvt qni'Chgt'vj g'vtcklpi 'uguukpu'y gtg'
 eqo r rgyff "d{ "cmr'ctvlekr cpw'cpf "eqpugpv'htqo u'y gtg'uki pgf . 'r ctvlekr cpw'y gtg'i kxgp"
 vj gk'r gf qo gvtu'cpf 'vj g'uwf { "dgi cp'y kj "ces wklpi "ödcugrkpgö"uvgR "eqwpv'f cxc0"Vj g"
 o gcp'qh'vj g'ugxgp'f c{ "qvcn'pwo dgt'qh'uvgR u'gcej 'r ctvlekr cpv'j cf "cngp'y cu'vj gp'wugf "cu"
 dcugrkpg'f cxc0"Rctvlekr cpw'ldcugrkpg'uvgR "eqwpv'o gcpu'y gtg'wugf "vq'i gpgtcvg'c'rkuv'
 qtf gtlpi 'r ctvlekr cpw'htqo "mqy guv'co qwpv'qh'f ckl{ "o gcp'uvgR u'vq'j ki j guv'co qwpv'qh'f ckl{ "
 o gcp'uvgR u0"Chgt'vj g'rkuv'y cu'o cf g'vj g'tgugctej gt'vj gp'r rnegf 'r ctvlekr cpw'kpv'qpg'qh'
 y q'i tqwr u."cngtpcvkpi "i tqwr "cuuki po gpv'htqo "vj g'qtf gtg'f "rkuv'qh'f ckl{ "o gcp'cxgtci g"
 uvgR u."kpv'qtf gt'vq'gpwvtg'vj cv'cp'gs wcn'co qwpv'qh'cevkxk{ "rgxgu'y gtg'tgr tguvgpvgf "kpv'dqj "
 vj g'eqvtqni'cpf "gZR gtlo gpvni tqwr 0"Chgt'r ctvlekr cpw'y gtg'r rnegf 'kpv'qpg'qh'y q"
 i tqwr u."c'eqkp'y cu'hrk r gf "vq'f gvgto kpg'y j lej "rkuv'qh'r ctvlekr cpw'y qwf "dg'vj g'eqvtqni'
 i tqwr "cpf 'y j lej 'y qwf "dg'vj g'gZR gtlo gpvni tqwr 0"Vj g'y q'i tqwr u'y qwf "tgegkxg'vj g"
 hmqy kpi "kpvgtxgpvkqp"qt'pqp/kpvgtxgpvkqp<"

- Eqvtqni tqwr <Vj ku'i tqwr "gZR gtlkpegf "pq'uqekn'gpcdrgo gpv'cpf "pq'kpvgtxgpvkqpu"
 qt'eqo r gvklxg'ej cmgpi gu0"Vj g{ 'j cf "ceegu'vq'vj gk'qprkpg'ceeqwpv'cpf 'y gtg'cdrg"
 vq'ugg'vj gk'qy p'uvgR 'f cxc0""
- GZR gtlo gpvni tqwr <Vj ku'i tqwr "gZR gtlkpegf "uqekn'gpcdrgo gpv'cpf "tgegkxgf "vj g"
 hmqy kpi "ej cmgpi g'kpvgtxgpvkqp<*"kpv'kklf wcn'eqo r gvklqp'kpv'uo cmr' tqwr u'qh'
 gs wcn'cdklk{ "d+kpvgti tqwr "qt'vgco "eqo r gvklqp"e+eqo r gvklqp'co qpi "qpg'rti g""

i tqwr "qh'xct {kpi "cdkx{0""Vj g{ 'j cf "ceeguu'vq'vj gk "qprkpg"ceeqwpw"cpf 'y gtg'cdng"
vq'ugg'vj gk "qy p'uvgr 'f cvc'cpf 'vj g'uvgr 'f cvc'qh'vj g'qyj gtu'kp'vj gk 'i tqwr 0'

Rct vlek cpv'Ugrgevkpp''

Rct vlek cpw'y gtg'ugrgev'f'htqo 'vj g'go r m{ gf "cf wv'r qr wv'vkpp0"Vj g'uco r rg'y cu"
wngp'htqo 'cf wvu'go r m{ gf "d{ 'vj g'Dtcj co 'Ctgc'Uej qqn'F kvtk'0"Qh'vj g'322"go r m{ ggu"
qp'uvh'tgegkxkpi 'vj g'go ckl'pxkcvkpp'vq'r ct vlek cvg'kp'vj g'uwwf { . 'k'y cu'cpvlek cvgf 'vj cv'
vj g'pwo dgt'qh'r ct vlek cpw'y qwf "dg'470"Vj g'cewcn'uco r rg'uk' g'y cu'64'cf wvu.'tcpi kpi 'kp'
ci g'htqo "46/930"Vy q'r ct vlek cpw'j cf "f cvc"gzemf gf 'htqo 'vj g'uwwf { 'f wg'vq'vj g'
r ct vlek cpw'pqp/eqo r rdepeg'y kj 'vj g'uwwf { 'i wkf g'rkpgu0"Vj g'hkpcn'uco r rg'uk' g'wugf 'hqt"
f cvc'cpcn'uku'kpenf gf "62'r ct vlek cpw0"Rct vlek cpw'kpenf gf <v'gej gtu.'cf o k'kvtcvqtu."
ugetgvctkgu.'r cter tqh'gu'kqpcn'cpf "cf f k'kqpcn'uwr r qtv'uvh' "k'0'eqo o vpk' { 'gf wcvkpp."
j wo cp'tguqwtegu.'eqqm.'dwa'f tkxgtu'cpf "ewuqf kcpu+0"Vj g'o clqtk' { 'qh'vj g'r ct vlek cpw"
y qtg'vj gk'r gf qo gvtu'gxgt { "f c{ 0"Uqo g'r ct vlek cpw'j cf "xctk'vkppu'kp'uvgr 'f cvc'f wg'vq"
gzvgtpcn'k'cevqtu'uwej "cu<x'cecvkppu.'qpg/vk' g'gxgpw'*y cm'vj qpu.'7M'twpu'gve0:'ces wkt gf "
kmpguugu.'f k'ueqwtci kpi 'y gcvj gt"eqpf k'kqpu'hqt"qwf qqt'cev'kxk' . 'dtqngp'qt'rqv'
r gf qo gvtu.'hqi gw'kpi 'vq'y gct'vj gk'r gf qo gvtu.'qt'qyj gty kug'kpf k'ecv'gf 'vj cv'vj g{ 'j cf "
gzr gtlgpegf "c'r tqdrgo 'y kj 'vj g'r tqi tco 0"Wukpi 'pgy 'r gf qo gvt'gs wkr o gpv'crupi 'y kj "
dglkpi 'cdng'vq'xkuwcm' { 'ugg'r tqi tguu't'gnc'v'xg'vq'uvgr "eqwpw'eqwf 'j cxg'cnuq'ecwugf "
r ct vlek cpw'vq'j cxg'oj ki j gt'vj cp'pqto cno'dcug'rkpg'uvgr "eqwpv'o gcp0""

Kput wo gpvc vkpp''

Vj g'tgugctej gt'wugf 'vj g'Xki kp'J gcmj O k'ngu'Qprkpg'Rgf qo gvt'Rtqi tco 'vq'eqmgev"
r ct vlek cpv'f cvc0"Vj g'r ct vlek cpw'v'o go dgtuj kr 'h'ggu'hqt'vj g'Xki kp'J gcmj O k'ngu'qpg/ { gct"
qprkpg'r tqi tco 'y gtg'r ckl' hqt'd{ "T guqwtg'O cpci go gpv'cpf "Vtckl'kpi "Uq'w'kqpu'cpf 'vj g'

Dtcj co "Uej qqn'Y gmpguu'Eqo o kvgg0'Rct vkr cpw'y gtg'tgs vktgf "vq'r c { 'hqt "c'r qt vkrp"qh" vj gk'r gf qo gvgt "2+cpf "y gtg"cmqy gf "vq"nggr "vj gk'r gf qo gvgtu'wr qp"vj g'eqpenwukqp"qh" vj g'uwwf {0'Rct vkr cpw'kp'dqy "i tqwr u'y gtg'tgs vktgf "vq"nqi "kpvq"vj gk't'ceeqwpu'f ckn{ "d { " r nwi i kpi "vj gk'r gf qo gvgtu'kpvq"vj gk't'eqo r wgt0'F ckn{ "uvgr "eqwpu'y gtg'f kur rc { gf "qp"vj g" qprkpg'r tqi tco "cpf "vj g'tgugctej gt'j cf "ceeguu"vq"gecej "r ct vkr cpw'u'qprkpg'ceeqwpu'kp" qtf gt"vq"qdvckp"vj gk't'uvgr "eqwpu'f cvc0"Vj g'go r j cuku'qh'vj g'r gf qo gvgt'r tqi tco "y cu'hqt "vj g" r ct vkr cpw'vq'kpetgcug'o qf gtcvg'r j { ukecn'cevxkv{ "cpf lqt "f ckn{ "uvgr u0'Rct vkr cpw'y gtg" kputwvvgf "pqv"vq"dgi kp"cp { "pgy "xki qtqwu'gzgtekug'tqwkpg"qt"vt { "vq"ftco cvckcm{ "kpetgcug" vj gk't'uvgr "eqwpu'y kj qw'eqpuwnkpi "vj gk't'r j { ukekcp'hktuv'cpf "y gtg'tgo kpf gf "vq"cnv c { u" utgvej "dghqtg"cpf "chgt"gpi ci kpi "kp"cp { "v'r g'qh'r j { ukecn'cevxkv{0'Rct vkr cpv'uchgv{ "y cu" hqewugf "qp'rcti gn{ "f wtkpi "vj g'dghqtg"cpf "chgt"uej qqn'tckkpi "uguukpu0"

Rct vkr cpv't gur qudkkv{ 'vq'ceewt cvgn{ 'b gcuwt g'uvgr u0'Gxgt { 'r ct vkr cpv'kp"

vj g'uwwf { "y cu'cdrg"vq"xkgy "vj gk't'r gtuqpcn'f ckn{ "uvgr "eqwpu'vqvcn'f cvkpi "dcen'vq"vj g'hktuv" f c { "vj g'uwwf { "dgi cp0"Hqt "vj g'hktuv'y ggn'qh'vj g'uwwf { . 'r ct vkr cpw'y gtg'kputwvvgf "vq" eqpf wv'vj gk't'f ckn{ "cevxkvku"cu'pqto cm{ "cu'r quukdr"vq"i gv'ceewt cvg'o gcuwt go gpu'qh" vj gk't'r j { ukecn'cevxkv{ "ngxgn0"Vj g'o gcp'qh'vj g'r ct vkr cpw'u'y ggm{ "uvgr "eqwpu'f cvc." eqmgev'f "htqo "gecej "r ct vkr cpv'f wtkpi "vj g'hktuv'y ggn'qh'vj g'uwwf { . 'y cu'wugf "cu"vj gk" dcugrkg'co qwpv'cpf "eqo r ct gf "vq"vj gk"o gcp"y ggm{ "uvgr "eqwpu'f cvc" f wtkpi "vj g" kpvgtxgpvkrp"qt'pqp/kpvgtxgpvkrp"y ggm'kp"qtf gt "vq" f gvgto kpg'kh'vj g'r tqi tco "j cf "c" uki p'k'k'cpv'ghge'v'qp"vj g'r ct vkr cpw'u0"Vj g'r ct vkr cpw'u'dcugrkg'uvgr "eqwpu'v'o gcpu'y gtg" cnq"wugf "vq"cuuki p'r ct vkr cpw'gs wcm{ "vq"dqy "vj g'eqpv'qnl'cpf "gzt g'ko gpcn'i tqwr u0"Hqt" vj g'gzt g'ko gpcn'i tqwr . "vj g'hqmny kpi "uwd/i tqwr u'y gtg'o cf g'hqt "vj g'hktuv'y q" kpvgtxgpvkrp"1 tqwr "c/ugf gpvct { "cevxkv{ "2/6.; ; ; "uvgr u'r gt "f c { +i tqwr "d/mqy "cevxkv{ "

*7222/9.6; ; "uvgr u'r gt 'f c { + 'i tqwr 'e/uoqo gy j cv'cevkg"*9.722/; .; ; ; "uvgr u'r gt 'f c { + 'cpf "
i tqwr 'f /cevkg'vq'j ki j n('cevkg'*32.222'qt'i tgcvtg'uvgr u'c'f c { +0''

F c v c 'E q n g e v k q p ''

Rgf qo gvgtu'f guki pgf 'd{ 'vj g'Xki kp'Eqtr qtcvkap''J gcnj O kgu'f kxkukqp.'cpf 'y gtg'
wugf 'vq'eqngev'f cvc'tgrvvgf 'vq'vj g'uvgr 'eqwpu'vj g'r ctvlekr cpw'y gctkpi 'vj go 'y qwrf 'i gv'
f ckn(0''Vj g'tgugctej gt'cwpgf gf 'c'ugo kpct'lp'y j lej 'vj g'Xki kp''J gcnj O kgu'r gf qo gvgt''
r tqi tco 'y cu'gZR mcpkf 'lp'f gvckn'cpf 'lpf kxkf wcu'y gtg'vtckpof 'qp'j qy 'vq'wug'o cp{ 'qh'vj g''
eqo r qpgpu'vj g'r tqi tco 'qhggtgf 0''Vj g'r gf qo gvgtu'dgkpi 'wugf 'y gtg'tgkcdrg'cpf 'cdrg'vq''
enqugn('tgeqtf 'vj g'i gpgtcn'co qwp'qh'uvgr u'vj g'lpf kxkf wcu'y gtg'vckpi 'y j krg'cnu'lvqtkpi ''
ugxgtrny ggm'v'ytvj 'qh'f cvc''Dq{ eg.'4233+0''Vj g'tgugctej gt'j grf 'hw'vtckkpi 'uguukpu''
*y q'dghqtg'uej qqr'cpf 'y q'chgt+'vj cv'r ctvlekr cpw'y gtg'tgs wktgf 'vq'cwpgf 'lp'y j lej 'vj g{''
tgegkxgf 'lpwtvkapu'qp'j qy 'vq'wug'vj gk'r gf qo gvgtu'cpf 'vj g'qprkpg'r tqi tco 0''kp'vj gug''
vtckkpi 'uguukpu'vj g'tgugctej gt'vwi j v'vj g'r ctvlekr cpw'j qy 'vq<T gi kvgt'hw'cpf 'wr mcf''
vj g''J gcnj O kgu'r tqi tco . 'wug'cpf 'u{pe'vj gk'r gf qo gvgtu.'ceegr v'ej cmgpi gu.'xkgy ''
ej cmgpi g'lvcpf kpi u.'mji 'vj gk'uvgr u'cpf 'ugv'i qcu0''Chgt'cwpgf kpi 'c'vtckkpi 'uguukp''
lpf kxkf wcu'y gtg'tgs wktgf 'vq'uki p'vj g'eqpugpv'hwto 'cpf 'r tqxkf g'vj g'tgugctej gt'y kj 'vj gk''
wugt'pco g'cpf 'r cuuy qtf 'dghqtg'cp{ 'f cvc'eqwrf 'dg'eqngev'gf 'qt'cpcn(| gf 0''''

K p v g t x g p v k q p u ' C f o l p k w g t g f ''

" Cmj qwi j 'dqj 'i tqwr u'qh'r ctvlekr cpw'y qtg'vj gk'r gf qo gvgtu'cpf 'mji i gf 'vj gk'uvgr u''
f ckn(.'r ctvlekr cpw'lp'vj g'eqpvtqni tqwr 'f kf 'pqvtgegkxg'cp{ 'eqo r gvkkxg'kpegpv'xg''
kpvgtxgpv'kqpu'y j gtgcu'r ctvlekr cpw'lp'vj g'gZR gtko gpvni tqwr 'tgegkxgf 'vj tgg'f khtg'gpv''
eqo r gvkkxg'kpegpv'xg'kpvgtxgpv'kqpu0''Gcej 'y ggm'chgt'vj g'dcugkpg'f cvc'eqngev'kap'y ggm''
vj g'r ctvlekr cpw'lp'vj g'gZR gtko gpvni tqwr 'gZR gtlgpegf 'c'f khtg'gpv'v'r g'qh'eqo r gvkkxg''

kpegpvkxg'kpvgtxgpvkp0"Vj gug'kpvgtxgpvkpu'y gtg'vgo gf "öej cmgpi guö"cpf "xctkfg 'kp"
 eqputwev'htqo 'y ggm'vq'y ggn0"Vj g'r ctvlekr cpw'kp'vj g'gzr gtlo gpvni tqr 'y gtg'i kxgp'vj g"
 hqmny kpi "eqo r gvkkxg'kpegpvkxg'kpvgtxgpvkpu"*ej cmgpi gu+<"c+'y ggm'qpg'ej cmgpi g/"
 kpf kxf weni'eqo r gvkkp'kp'uo cmi tqr u'qh'gs weni'cdkxv{."*d+'y ggm'v q'ej cmgpi g/
 kpvgti tqr "eqo r gvkkp'cpf "*e+'y ggm'v tgg'ej cmgpi g/kpf kxf weni'eqo r gvkkp'kp'qpg'rti g"
 i tqr "qh'xct {kpi "cdkxv{0""

Kpvgtxgpvkp'qpg<E qo r gvkkp'kp'uo cmi tqr u'qh'gs weni'cdkxv{ 0"kp'vj g'htuv"

kpvgtxgpvkp'r ctvlekr cpw'kp'vj g'gzr gtlo gpvni tqr 'y gtg'cuuki pgf "v'ur gekhe'r j {ulecni'
 cevkkv{ ldkxv{ 'i tqr u'dcugf "qp'vj g'tguwu'qh'vj gk'dcugrkpg'uvgr "eqwv'f cvc0"I tqr "C"
 *ugf gpvt{/2/6.; ; ; "uvgr "dcugrkpg'o gcp+'j cf "vj tgg'o go dgtu."I tqr "D"*ny "cevkkv{/7.222/
 9.6; ; "uvgr "dcugrkpg'o gcp+'j cf "9"o go dgtu."I tqr "E"*uqo gy j cv'cevkg/9.722/; .; ; ; "
 dcugrkpg'uvgr "o gcp+'j cf "7"o go dgtu'cpf "I tqr "F"*cevkg'v'j ki j n{ "cevkg/32.222"uvgr u'qt"
 o qtg'ht"dcugrkpg'o gcp+'j cf "7"o go dgtu0"Rctvlekr cpw'kp'vj g'gzr gtlo gpvni tqr 'y gtg"
 kpxkfg 'v'ceegr v'vj g'ej cmgpi g'htqo "gkj gt'vj g'go cni'kpxkcvk'vj g{ 'tgegkxg'qt'vj tqw j "
 vj gk'qprkpg"J gcnj O kgu'ceeqpva0""

Ccej "qh'vj g'cdkxv{ 'i tqr u'y gtg'gpi ci gf "kp'vj gk'qy p'eqo r gvkkxg'kpegpvkxg"
 kpvgtxgpvkp'qt"öej cmgpi gö0"Vj g'ej cmgpi g'ucvfg 'vj g'hqmny kpi <ö[qw'j cxg'dggp"
 ej cmgpi gf "v'i gv'vj g'o quv'uvgr u'kp'qpg'y ggm'v'q'ceegr v'vj ku'ej cmgpi g'erlem'q'vj g'htmi'qt"
 uki p'kp'v{"qwt"Xkt i kp"J gcnj O kgu'ceeqpva0""Qpeg'r ctvlekr cpw'ceegr vfg 'vj g'ej cmgpi g"
 vj g{ 'y gtg'cdng'v'xkgy 'vj gk'qy p'uvgr u'r tqi tguu.'vj g'uvgr "v'wcu'qh'vj g'qv'j gtu'gpi ci gf "kp"
 vj g'uco g'uo cmi tqr "eqo r gvkkp."cpf "vj gk'ucvfg kpi u'kp'eqo r ctuqp'v'vj g'qv'j gt"
 o go dgtu'qh'vj gk'ur gekhe'i tqr 0"Vj g'tgugctej gt'kpkcvfg 'htw'ej cmgpi gu'uko wncpgqwu{."
 qpg'ht"gej "qh'vj g'ur gekhe"cdkxv{ 'i tqr u0"Vj g'kpvgtxgpvkp'ucvfg "qpg'y ggm'cv'vj g'gpf "

qh'vj g'y ggm'uogr "eqwpu'y gtg'eqmgevfg 'Htqo "cm'r ctv'ekr cpw'lp'dqvj "qh'vj g'i tqwr u."eqpvtqni'
cpf "gZR gtko gpvni0"Vj g'r ctv'ekr cpw'lp'vj g'eqpvtqni' tqwr "f kf "pqv'tgegkxg'cp { 'ej cmgpi g'
kpvgtxgpkvqpu'dw'vj g { 'y gtg'cdrg'vq'ugg'vj gkt "qy p'uogr "eqwpu0""

Chgt'vj g'ej cmgpi g'hqt'y ggm'qpg'j cf "gpf gf . 'vj g'tgugctej gt'ugpv'vj g'r ctv'ekr cpw'c"
eqpi tcwrcvt { "go ckn'hk'kpi 'vj g'y kppgtu'lp"gecj "qh'vj g'i tqwr u'eqo r gv'kxg'ej cmgpi gu0"
Vj g'tgugctej gt"eqmgevfg 'f c'c'Htqo 'vj g'r ctv'ekr cpw'lp'vj g'gZR gtko gpvni' tqwr "cpf "
eqo r ctgf 'k'vq'dqvj 'vj gkt "qy p"dcugrkpg'f c'c'wukpi 'r cktgf 'v'v'guu."cpf "cnuq'vq'vj g'f c'c"
eqmgevfg 'Htqo 'vj g'eqpvtqni' tqwr "hqt 'vj g'eqttgur qpf kpi 'y ggm'qh'pqp/kpvgtxgpkvqpu'wukpi "
wpr cktgf 'v'v'guu0"Ugr "eqwpu'f c'c'Htqo "dqvj 'vj g'eqpvtqni'cpf "gZR gtko gpvni' tqwr u'y gtg"
r tqi tco gf "kpv'vj g'O letquqh'Gzegri'cpf "URUU'f c'c'cpcn { uku'r tqi tco u'y j gtg'v'v'guu'y gtg"
wugf 'vq'f gv'gto kpg'h'cp { 'uki p'k'hecpv'f k'htgpegu'y gtg'g'xkf gpv0""

Kpvgtxgpkvqpu'vj q<'Kpvgti tqwr 'eqo r gv'kxg'0Hqt'vj g'ugeqpf 'kpvgtxgpkvqpu.'vj g'
uo cmi' tqwr u'f kf "pqv'ej cpi g=vj ku'y cu'f qpg'lp"qtf gt'vq'r t'g'x'gpv'kpf k'k'f wcu'Htqo "j c'x'kpi "
hgg'kpi u'qh'kpcf gs wce { 'y j gp'uggkpi 'vj gkt 'uogr u'eqo r ctgf 'vq'v'qo g'qpg'y kj "c'u'wduv'p'kcm { "
j ki j gt'uogr "eqwpu0"Hqt'vj ku'kpvgtxgpkvqpu.'r ctv'ekr cpw'lp'vj g'gZR gtko gpvni' tqwr "y gtg"
eqo r gv'kpi 'y kj 'vj gkt 'uo cmi' tqwr u'cu'c'v'gco "vq't'gcej "c'i q'cni0"Vj g'i q'cni'y cu'vq'dg'vj g"
i tqwr "vj cv'j cf "vj g'o quv'v'gco "o go dgtu'k'petgcug'vj gkt 'f ckn { 'uogr u'Htqo 'vj gkt "dcugrkpg'f c'c"
d { "4.222."o quv'q'h'v'p."hqt 'vj g'f w'c'v'k'q'qh'q'pg'y ggn0"cmgpi 'y kj 'vj g'cdk'k'v { 'vq'cee'gr v'vj ku'
ej cmgpi g'vj tqwi j 'vj gkt "q'p'rk'pg'cee'q'w'v'vj g't'gugctej gt'ugpv'cp"go ckn'k'p'x'k'kpi 'r ctv'ekr cpw'
vq'vj g'ej cmgpi g'vj cv'h'k'v'gf 'vj g'ej cmgpi g'et'k'g't'k'0"Vj g'r ctv'ekr cpw'lp'vj g'eqpvtqni' tqwr "
f kf "pqv'tgegkxg'cp { 'ej cmgpi g'kpvgtxgpkvqpu'dw'vj g { 'y gtg'cdrg'vq'ugg'vj gkt "qy p'uogr "
eqwpu0""

Chgt'vj g'ej cmgpi g'hqt'y ggnly q'j cf "gpf gf . 'vj g'tgugctej gt'ugpv'vj g'r ctvlek cpw'c"
 eqpi tcwrcvt { "go ckn'rkukpi 'vj g'o go dgtu'qh'vj g'i tqwr 'y kppkpi 'vj g'vgeo 'ej cmgpi g0"Vj g"
 tgugctej gt'eqmgev f'f c'c'htqo 'vj g'r ctvlek cpw'k'vj g'g'zr g'ko gpvni tqwr "cpf "eqo r ctgf 'k'
 vq'dqvj 'vj g'kt'qy p'dcugrkpg'f c'c'wukpi 'r cktgf 'v'v'g'uu. 'cpf "cnuq'v'vj g'f c'c'eqmgev f'htqo 'vj g'
 eqpvtqni tqwr 'hqt'vj g'eqttgur qpf kpi 'y ggn'wukpi 'wpr cktgf 'v'v'g'uu0"Ugr "eqwpv'f c'c'htqo "
 dqvj 'vj g'eqpvtqni'cpf "g'zr g'ko gpvni tqwr u'y g'tg'r tqi tco gf 'kpv'vj g'O letquqhv'Gzegni'cpf "
 URUU'f c'c'cpen'uku'r tqi tco u'y j g'tg'v'v'g'uu'y g'tg'wugf 'v'f g'v'g'to kpg'k'cp { 'uki p'k'k'ecp'
 f k'htg'p'egu'y g'tg'g'xkf gp'0"*****

Kpvtxgpvkqp'vj tgg<E qo r gvskqp'kp'qpg'htci g'i tqwr 'qhxct { kpi 'cdkks { 0'Vj g'
 vj kf "cpf 'h'kpcn'k'pvtxgpvkqp'y cu'c'htci g'i tqwr 'ej cmgpi g'co qpi 'vj qug'y kj 'xct { kpi "
 cdkks'ku0"Vj g'tgugctej gt'ugpv'q'w'vj g'h'kpcn'eqo r gvskx'g'k'p'eg'v'x'g'f g'v'cku'd { "go ckn'cpf 'vj g"
 r ctvlek cpw'y g'tg'cnuq'cdng'v'q'ceegr v'vj g'ej cmgpi g'vj tqwi j 'vj g'kt'q'p'rkpg'ceeqwpw0"Vj g"
 ej cmgpi g'y cu'uko kct'k'p'f g'uki p'v'q'vj g'ej cmgpi g'htqo 'y ggn'q'pg'v'q'oi g'v'vj g'o quv'u'vgr u'k'p"
 qpg'y ggnö. 'j qy g'xgt. 'vj ku'v'ko g'g'cej 'o go dgt'qh'vj g'g'zr g'ko gpvni tqwr 'y cu'eqo r gv'kpi "
 ci ckpu'cm'vj g'q'vj g't'o go dgtu'qh'vj g'g'zr g'ko gpvni tqwr 0"Rctvlek cpw'ej genkpi 'vj g'kt "
 r tqi tgu'f w'kpi 'vj ku'k'pvtxgpvkqp'y g'tg'cdng'v'q'ugg'vj g'u'vgr "eqwpv'v'q'v'cu'qh'cm'vj g"
 r ctvlek cpw'k'vj g'g'zr g'ko gpvni tqwr 0"Vj g'r ctvlek cpw'k'vj g'eqpvtqni tqwr 'f kf 'pqv"
 tge'g'k'g'cp { "ej cmgpi g'k'pvtxgpvkqp'u'dw'vj g { 'y g'tg'cdng'v'q'ugg'vj g'kt'qy p'u'vgr "eqwpw0"***

Chgt'vj g'ej cmgpi g'hqt'y ggnly tgg'j cf "gpf gf . 'vj g'tgugctej gt'ugpv'vj g'r ctvlek cpw'
 cp"go ckn'rkukpi 'vj g'y kppgt'qh'vj g'h'kpcn'ej cmgpi g0"Vj g'tgugctej gt'eqmgev f'f c'c'htqo 'vj g"
 r ctvlek cpw'k'vj g'g'zr g'ko gpvni tqwr "cpf "eqo r ctgf 'k'v'q'dqvj 'vj g'kt'qy p'dcugrkpg'f c'c'
 wukpi 'r cktgf 'v'v'g'uu. 'cpf "cnuq'v'vj g'f c'c'eqmgev f'htqo 'vj g'eqpvtqni tqwr 'hqt'vj g"
 eqttgur qpf kpi 'y ggn'wukpi 'wpr cktgf 'v'v'g'uu0"Ugr "eqwpv'f c'c'htqo "dqvj 'vj g'eqpvtqni'cpf "

gxr gklo gpcnfi tqwr u'y gtg'r tqi tco gf "kpq'vj g'O letquqh/Gzegncpf "URUU'f cvc'cpcn{uku'
 r tqi tco u'y j gtg'v'vguu'y gtg'wugf "v'f gvgto kpg'kh'cp{ 'uki pkkcepvf khhgtgpegu'y gtg"
 gxkf gpv0''''''''

Kpvt r t gkpi 'Ceewo wvvgf 'F cvc''

Chgt'vj g'f cvc'j cf "dggp'eqmgevgf 'htqo 'cm'qh'vj g'kpvtxgpvkqp'y ggmi'k'y cu'vj gp"
 r tqi tco o gf "kpq'vj g'O letquqh/Gzegncf cvc'cpcn{uku'r tqi tco 'y j gtg'v'vguu'y gtg"
 eqpf wvvgf "dgy ggp'gcej 'qh'eqo r gvkqp'y ggmi'kp'qtf gt'v'f gvgto kpg'kh'cp{ 'uki pkkcepv'
 f khhgtgpegu'y gtg'gxkf gpv'kp'vj g'r ctvkr cpw0'Rckgf 'v'vguu'y gtg'cnuq'eqpf wvvgf 'hqt'vj g"
 r ctvkr cpw'kp'vj g'eqvtqni tqwr "dgy ggp'vj gk'dcugkpg'f cvc'cpf "gcej 'y ggmi'vj cv'pq"
 kpvtxgpvkqp'y cu'cf o kpvtgf "v'f gvgto kpg'kh'cp{ 'uki pkkcepvf khhgtgpegu'y gtg'gxkf gpv'hqt"
 vj gk'y ggmi'qh'pqp/kpvtxgpvkqp0'

Uwo o ct{''

" F cvc'y gtg'eqmgevgf 'htqo 'vj g'eqvtqncpf "gxr gklo gpcnfi tqwr u'y tqwi j qw'vj g"
 f wcvkqp'qh'vj g'uwwf {0''Vj g'tgugctej gt'cpcn| gf 'f cvc'kp'c'xctkgv{ 'qh'y c {u'v'f gvgto kpg'kh'
 cp{ 'uki pkkcepvf khhgtgpegu'kp'uvgr "eqwpw'y gtg'dgkpi "gzj kdkgf 'd{ 'vj g'r ctvkr cpw0'Dqyj "
 vj g'O letquqh/Gzegncpf "URUU'f cvc'cpcn{uku'r tqi tco u'y gtg'wugf 'hqt'vj g'f cvc'cpcn{ugu0''

" Vj g'f cvc'cpcn{ugu'ecp'dg'dtqngp'f qy p'kpq'hqwt'ecvgi qtkgu<*>'d+vj 'vj g'eqvtqni'
 cpf "gxr gklo gpcnfi tqwr w'uvgr "eqwpv'f cvc'htqo "gcej 'kpvtxgpvkqp'qt'pqp/kpvtxgpvkqp'y cu"
 eqo r ctgf "v'f gk'qy p'dcugkpg'f cvc'wukpi 'r cktgf 'v'vguu.'*d+'vj g'gxr gklo gpcnfi tqwr w'
 uvgr "eqwpv'f cvc'htqo "gcej 'kpvtxgpvkqp'y ggmi'cu'eqo r ctgf "v'f g'f cvc'eqmgevgf 'htqo 'vj g"
 eqvtqni tqwr 'f wtkpi 'vj gk'eqttgur qpf kpi 'y ggmi'qh'pqp/kpvtxgpvkqp'wukpi 'vj tgg"
 kpf gr gpf gpv'wpr cktgf 'v'vguu.'*e+'vj g'eqvtqncpf "gxr gklo gpcnfi tqwr w'v'v'cno' gcp'uvgr "
 co qwpw'f wtkpi 'cm'y ggmi'qh'kpvtxgpvkqp'pqp/kpvtxgpvkqp'y gtg'eqo r ctgf 'd{ "eqpf wv'kpi "

Tgumu'

Vj g'hqmqy kpi 'pwnj' { r qvj gugu'y gtg'eqpukf gtgf 'y j gp'cpcn| kpi 'vj g'f cv'qdvkpgf 'y j kg'
 eqpf wexkpi 'vj g'uwwf {<

*3+'P wniJ { r qvj guku<Vj gtg'y km'dg'pq'uki pkkcepvf khtgpeg'kp'vj g'co qwpv'qh'vqcn'
 ugr u'vcnpg'd { 'kpf kxf wcn'vj cv'r ctvkr cvgf 'kp'r gf qo gvt'r tqi tco 'y j gp"
 eqo r gvkkxg'kpegpvxgu'y gtg'wugf 'xgtugu'vj g'co qwpv'qh'vqcn'ugr u'vcnpg'd { 'vj g'
 r ctvkr cpw'y j gp'pq'eqo r gvkkxg'kpegpvxgu'y gtg'wugf 0' *Reject Null Ho"

*4+'P wniJ { r qvj guku<Vj gtg'y km'dg'pq'uki pkkcepvf khtgpeg'kp'vj g'co qwpv'qh'ugr u'
 vcnpg'd { 'vj g'r ctvkr cpw'y j gp'vj g { 'y gtg'gpi ci gf 'kp'uo cmf tqwr u'qh'gs wcn'cdkx' "
 cu'eqo r gvkkxg'kpegpvxg'xgtugu'vj g'co qwpv'qh'ugr u'vcnpg'd { 'vj g'r ctvkr cpw'y j gp"
 pq'eqo r gvkkxg'kpegpvxgu'y gtg'wugf 0'" " , Fail to Reject Null Ho"'''''''' "

*5+'P wniJ { r qvj guku<Vj gtg'y km'dg'pq'uki pkkcepvf khtgpeg'kp'vj g'co qwpv'qh'ugr u'
 vcnpg'd { 'vj g'r ctvkr cpw'y j gp'vj g { 'y gtg'gpi ci gf 'kp'kvgti tqwr "eqo r gvkkqp'cu"
 eqo r gvkkxg'kpegpvxg'xgtugu'vj g'co qwpv'qh'ugr u'vcnpg'd { 'vj g'r ctvkr cpw'y j gp"
 pq'eqo r gvkkxg'kpegpvxgu'y gtg'wugf 0'" " " , Reject Null Ho"

*6+'P wniJ { r qvj guku<Vj gtg'y km'dg'pq'uki pkkcepvf khtgpeg'kp'vj g'co qwpv'qh'ugr u'
 vcnpg'd { 'vj g'r ctvkr cpw'y j gp'vj g { 'y gtg'gpi ci gf 'kp'c'rti g'i tqwr "eqo r gvkkqp'cu"
 eqo r gvkkxg'kpegpvxg'xgtugu'vj g'co qwpv'qh'ugr u'vcnpg'd { 'vj g'r ctvkr cpw'y j gp"
 pq'eqo r gvkkxg'kpegpvxgu'y gtg'wugf 0'" " " , Reject Null Ho"

*7+'P wniJ { r qvj guku<Vj gtg'y km'dg'pq'uki pkkcepvf khtgpeg'kp'vj g'co qwpv'qh'ugr u'
 vcnpg'd { 'vj g'r ctvkr cpw'kp'vj g'gzr gtko gpvni tqwr 'y j gp'vj g { 'y gtg'gpi ci gf 'kp'
 uo cmf tqwr u'qh'gs wcn'cdkx' { 'cu'eqo r gvkkxg'kpegpvxg'xgtugu'kvgti tqwr "
 eqo r gvkkqp'cu'eqo r gvkkxg'kpegpvxg 0'" " , Fail to Reject Null Ho"

*8+P wniJ { r qvj guku<"Vj gtg'y kn'dg'pq'uki p~~h~~ecpv'f k~~h~~gtgpeg'lp'yj g'co qwpv'qh'u~~u~~gr u"
 vcn~~g~~p'd{ 'y g'r ct~~v~~ekr cpw'lp'yj g'g~~z~~r g~~t~~ko gpvcn'i tqwr 'y j gp'yj g{ 'y gtg'gpi ci gf 'lp"
 uo cm'i tqwr u'qh'gs wcn'cdk~~k~~v{ "cu'eqo r g~~v~~k~~x~~g'lp~~e~~gp~~v~~xg'xgtugu'rti g'i tqwr "
 eqo r g~~v~~k~~k~~qp'cu'eqo r g~~v~~k~~x~~g'lp~~e~~gp~~v~~xg'0 " , Fail to Reject Null Ho"

*9+P wniJ { r qvj guku<"Vj gtg'y kn'dg'pq'uki p~~h~~ecpv'f k~~h~~gtgpeg'lp'yj g'co qwpv'qh'u~~u~~gr u"
 vcn~~g~~p'd{ 'y g'r ct~~v~~ekr cpw'lp'yj g'g~~z~~r g~~t~~ko gpvcn'i tqwr 'y j gp'yj g{ 'y gtg'gpi ci gf 'lp"
 rti g'i tqwr "eqo r g~~v~~k~~k~~qp'cu'eqo r g~~v~~k~~x~~g'lp~~e~~gp~~v~~xg'xgtugu'lpv~~t~~i tqwr "eqo r g~~v~~k~~k~~qp'cu'
 eqo r g~~v~~k~~x~~g'lp~~e~~gp~~v~~xg'0" " " " *Fail to Reject Null Ho"

*: +P wniJ { r qvj guku<"Kp'yj g'g~~z~~r g~~t~~ko gpvcn'i tqwr 'y gtg'y kn'dg'pq'uki p~~h~~ecpv'f k~~h~~gtgpeg"
 lp'yj g'co qwpv'qh'dcug~~n~~kp'ugr u'vcn~~g~~p'd{ 'r ct~~v~~ekr cpw'xgtugu'yj g'co qwpv'qh'u~~u~~gr u"
 vcn~~g~~p'y j gp'uo cm'i tqwr u'qh'gs wcn'cdk~~k~~v{ 'y gtg'wugf "cu'eqo r g~~v~~k~~x~~g'lp~~e~~gp~~v~~xg'cpf "
 ecuj "cpf lqt'r tk g'lp~~e~~gp~~v~~xg'u'y gtg'pqv'q~~h~~gtgf 0' " *Reject Null Ho"

*; +P wniJ { r qvj guku<"Kp'yj g'g~~z~~r g~~t~~ko gpvcn'i tqwr 'y gtg'y kn'dg'pq'uki p~~h~~ecpv'f k~~h~~gtgpeg"
 lp'yj g'co qwpv'qh'dcug~~n~~kp'ugr u'vcn~~g~~p'd{ 'r ct~~v~~ekr cpw'xgtugu'yj g'co qwpv'qh'u~~u~~gr u"
 vcn~~g~~p'y j gp'lpv~~t~~i tqwr u'y gtg'wugf "cu'eqo r g~~v~~k~~x~~g'lp~~e~~gp~~v~~xg'cpf "ecuj "cpf lqt'r tk g"
 lp~~e~~gp~~v~~xg'u'y gtg'pqv'q~~h~~gtgf 0' " " " " *Reject Null Ho"

*32+P wniJ { r qvj guku<"Kp'yj g'g~~z~~r g~~t~~ko gpvcn'i tqwr 'y gtg'y kn'dg'pq'uki p~~h~~ecpv'
 f k~~h~~gtgpeg'lp'yj g'co qwpv'qh'dcug~~n~~kp'ugr u'vcn~~g~~p'd{ 'y g'r ct~~v~~ekr cpw'xgtugu'yj g"
 co qwpv'qh'u~~u~~gr u'vcn~~g~~p'y j gp'qpg'rti g'i tqwr "eqo r g~~v~~k~~k~~qp'y cu'wugf "cu'eqo r g~~v~~k~~x~~g"
 lp~~e~~gp~~v~~xg'cpf "ecuj "cpf lqt'r tk g'lp~~e~~gp~~v~~xg'u'y gtg'pqv'q~~h~~gtgf 0' , Reject Null Ho"

"
 "

" Vj g'tgugctej gt'r mēgf "gs wcn'lvgr "r j { ukecn'cevxkx{ +cej kxgtu'lp'y q'i tqwr u'vj gp" tcpf qo n' "cuuki pgf "vj g'gzr gtlo gpcn'cpf "eqptqnl' tqwr 0"P q'uki p'khecpv'f k'htgpegu'y gtg" uggp'lp'y g'co qwpv'qh'lvgr u'dgkpi "cej kxgf "d{ "vj g'r ctvlek cpw'lp'y g'gzr gtlo gpcn'cpf " eqptqnl' tqwr "hqt"vj gk "dcugn'pg'o gcuwtgu0"Cff k'kqpcn{ "pq'uki p'khecpv'f k'htgpegu'y gtg" uggp"d{ "vj g'r ctvlek cpw'lp'y g'eqptqnl' tqwr "y j gp"eqo r ctkpi "vj gk"pqp/k'pvtxgp'v'kqp" y ggm'u'q'vj gk "qy p'dcugn'pg'f cvc0"***** ""

Vcdng'3"

"

Summary of a two-tailed, unpaired t-test and the Means (M), Standard Deviations (SD) and the Probability (p) values on the Effect of Competitive intervention and Non-intervention between the Control and Experimental Group for total weeks.

I tqwr	O *UF +	Vxcnmg' r "
"Eqptqnl'	.26: 06*632: 0; +	3867' 023:
"Gzr gtlo gpcn'	33.2: 908*7962072+ "	

" Vj g'tguwnu'lp'Vcdng'3'y gtg'qdvcl'pgf "d{ "eqpf wv'kpi "y q/v'ckngf "wpr cktgf "V'v'guu0' Tguwnu'uj qy gf "Vcdng'3+"vj cv'vj g'r ctvlek cpw'lp'y g'gzr gtlo gpcn' tqwr "vqnl' uki p'khecpv'f "o qtg'lvgr u'vj gp"vj g'eqptqnl' tqwr "f k' "y j gp"eqo r ctkpi "vj g'gzr gtlo gpcn' i tqwr u'qxgtcm'lvgr "o gcp'f wtkpi "vj g'k'pvtxgp'v'kqp'y ggm'u'q'vj g'eqptqnl' tqwr u'qxgtcm' lvgr "o gcp'f wtkpi "vj gk "eqttgur qpf kpi "y ggm'qh'pqp/k'pvtxgp'v'kqp0"Vj g'h'k'p'kpi u'r t'gugpv'gf " k'p'dqj "Vcdng'3"cpf "4'y gtg'uko k'rt"v'q'y j cv'r t'gxl'qwu't'gugctej gtu'j cf "uwi i guvgf "cdqw'vj g" gh'ge'v'x'gpguu'qh'r gf qo gvg't'r tqi tco u' "H'quvgt "gv'cr0"4232="M'cpi "gv'cr0"422; ="XcpY qto gt" gv'cr0"4228+0"Vj g'f cvc'uj qy p'lp'Vcdng'3"cpf "4"cnuq'cpuy gtgf "vj g's wgu'k'qpu'vj cv'M'cpi " cpf "eqmgci wgu"*422; +"cpf "XcpY qto gt'cpf "eqmgci wgu"*4228+"j cf "cf f t'guugf "t'gi ctf kpi " vj g'gh'ge'v'x'gpguu'qh'vj g'o q'v'x'c'v'k'p'c'n'c'w't'k'd'w'gu'cuu'q'ek'c'v'g'f "y k'j "r gf qo gvg't'r tqi tco u0"Vq"

cpuy gt 'y g's wgu'qpu'qh' Mcpi 'cpf 'eqmgci wgu' *4232+ 'cpf 'XcpY qto gt 'cpf 'eqmgci wgu'
 *4228+ 'y g't guwmu'lp' y gug'wy q 'Vcdrgu' *3('4+ 'uwi i guv' y cv' ecuj 'cpf lqt' r tk' g' lpegpv' xgu'
 ctg' pqv' pgeguuct { 'v' o qv' xcv' y g' r ct' v' l' k' r cpw' l' p' r gf qo gvt' r tqi tco u' v' 'v' cng' o qtg' uvr u0"
 Vj g' t' g' u' g' c' t' e' j' g' t' y' cu' c' d' r' g' 'v' q' t' g' l' g' e' v' y' g' h' t' u' v' p' w' m' j' { r qv' g' u' k' u' d' c' u' g' f' 'q' p' y' g' t' g' u' w' m' u' l' j' q' y' p' l' p' "
 Vcdrg'30

"Vcdrg'4"

Summary of two-tailed, unpaired t-tests, Means (M), Standard Deviations (SD) and the Probability (p) values between the Control and Experimental Group for each week of Intervention and Non-intervention

I tqwr	kpvtxgpkqp	IP qp	O	*UF +	vxcnwg	r
--------	------------	-------	---	-------	--------	---

Eqptqni	P qp/ kpvtxgpkqp		.454	089	*7.479	074
Gzr gtko gpcni	Uo cni I tqwr	Gs wcn	32.63	0	;	*7.23: 023

Eqptqni	P qp/ kpvtxgpkqp		9.638	072	*5.593	02
Gzr gtko gpcni	kpvti tqwr		33.867	084	*7.936	064

Eqptqni	P qp/ kpvtxgpkqp		9.547	053	*5.273	047
Gzr gtko gpcni	Ncti g' I tqwr		33.4	402	*8.979	0

" Vcdrg'4' t' gr' t' g' u' p' w' 'y' g' q' w' r' w' q' h' f' c' v' h' t' q' o' 'w' p' r' c' k' t' g' f' 'v' g' u' u' h' q' t' g' c' e' j' 'y' g' g' m' i' q' h' "
 kpvtxgpkqp" eqo r ctgf 'y kj 'pqp/ kpvtxgpkqp. 'chgt' dcugr' k' p' g' 0' F' c' v' c' y' g' t' g' 'c' p' c' n' |' g' f' 'y' k' u' "
 y c { 'v' f' g' v' g' t' o' k' p' g' 'y' j' k' e' j' 'y' g' g' m' i' u' 'y' g' t' g' 'u' r' g' e' k' h' e' 'v' q' 'y' g' 'u' k' i' p' k' h' e' c' p' e' g' 'd' g' k' p' i' 'u' w' i' g' u' v' g' f' 'd' { 'y' g' "
 q' x' g' t' c' m' i' c' p' c' n' { 'u' k' u' 'q' h' 'v' q' v' c' n' i' y' g' g' m' i' 'u' g' g' 'v' c' d' r' g' '3' -' 0' 'k' p' 'y' g' t' g' u' w' m' u' l' j' q' y' p' 'q' p' 'v' c' d' r' g' '4' . 'y' g' "
 r' c' t' v' l' e' k' r' c' p' w' l' p' 'y' g' g' z' r' g' t' k' o' g' p' c' n' i' t' q' w' r' 'v' q' m' l' u' k' i' p' k' h' e' c' p' v' n' { 'o' q' t' g' 'u' v' r' u' 'y' g' p' 'y' g' r' c' t' v' l' e' k' r' c' p' w' l' "
 k' p' 'y' g' 'e' q' p' t' q' n' i' t' q' w' r' 'f' w' t' k' p' i' 'd' q' v' y' g' 'l' p' v' g' t' i' t' q' w' r' 'c' p' f' 'h' e' t' i' g' i' t' q' w' r' 'e' q' o' r' g' v' k' k' x' g' 'k' p' v' t' x' g' p' k' q' p' u' 0' "
 Vj g' t' g' u' w' m' u' l' j' q' y' p' l' p' 'v' c' d' r' g' '4' 't' g' i' c' t' f' k' p' i' 'u' o' c' m' i' t' q' w' r' u' 'q' h' 'g' s' w' c' n' i' c' d' k' k' v' { 'e' q' p' t' c' f' k' e' v' g' f' 'y' g' "
 u' w' i' g' u' v' k' q' p' u' 'q' h' I' c' t' e' k' 'c' p' f' 'v' q' t' *422; + 'c' u' 'k' 'y' c' u' 'f' g' v' g' t' o' k' p' g' f' 'y' c' v' 'p' q' 'u' k' i' p' k' h' e' c' p' v' l' p' e' t' g' c' u' g' u' "
 y' g' t' g' 'u' g' g' p' 'y' j' g' p' 'u' o' c' m' i' t' q' w' r' u' 'q' h' 'g' s' w' c' n' i' c' d' k' k' v' { 'y' g' t' g' 'u' v' g' f' 'c' u' 'y' g' 'v' { 'r' g' 'q' h' 'e' q' o' r' g' v' k' k' x' g' "

kpegpvkxg0'I ctekc'cpf 'Vqt '*422; +j cf 'uwi i guvgf 'cp'kpetgcug'kp'o qvxcvqap'y cu'gxkf gpv'
 hqt'kpf kxf wcu'eqo r gvki 'kp'uo cmf tqwr u'qh'gs wcn'cdkkrv{ 'j qy gxgt 'vj g't guvnu'kp'Vcdrg"
 wy q'uwi i guv'qyj gty kug'cu'r @27"? '68; 0"Vj g't guvnu'uj qy p'kp'Vcdrg'4'ecwugf 'vj g"
 tgugctej gt'vq'hcki'vq'tglgev'pwnj { r qyj gugu'4'cpf 'tglgev'pwnj { r qyj guku'5'cpf '60"
 Vcdrg'5"

Summary of two-tailed paired t-tests, Means (M), Standard Deviations (SD) and the Probability (p) values between the Experimental Group's baseline steps and each week of Intervention.

"Vko g"	p	O '*UF +	Vxcnwg	r "
"Dcugrkg	42	: .38507	*5.58606+	/50 5
"Uo cmf tqwr	42	32.63: 0 ;	*7.23: 03+	
"Dcugrkg	3;	.56; 07*	5.57204+	/506
"Kvgti tqwr	3;	33.45; 03*	7.: 4: 0 ; +	
"Dcugrkg	3:	.6; 80: *55: 506;	+ /404:	058
"Ncti g'I tqwr	3:	32.: 4207*	8: 640 : +	

" Kp'Vcdrg'5.'vj g'gizr gtko gpvcni tqwr u'dcugrkg'uvgr 'o gcpu'y gtg'eqo r ctgf 'vq'vj gk"
 kpf kxf wcn'kvgtxgpvqap'uvgr 'o gcpu.'r gt'kvgtxgpvqap'y ggm'd { 'eqpf wvki 'r cktgf 'v'vguu0"
 Qpn { 'r ctvkr cpw'j cxkpi 'ceewtcv'f cw'hqt 'vj g'eqttgur qpf kpi 'y ggmu'qh'uwf { 'y gtg'gki kdrg"
 hqt'r qt'vqpu'qh'vj ku'uwf { 0"Y j gp'iqnki 'cv'Vcdrg'5'k'ku'gxkf gpv'vj cv'vj g'r ctvkr cpw'kp"
 vj g'gizr gtko gpvcni tqwr 'vqnm'uki p'k'k'ecpv'f 'o qtg'uvgr u'f wtkpi 'vj gk'y ggmu'qh'kvgtxgpvqap"
 vj gp'vj g'vqnmf wtkpi 'vj gk'dcugrkg'y ggm'hw'vj gto qtg.'vj g'f'kf'v'q'y j gp'ecuj 'cpf lqt"
 r tk'g'kpegpvkxg'u'y gtg'pqv'qh'htgf 'f wtkpi 'vj gk'y ggmu'qh'eqo r gvkkxg'kvgtxgpvqap0"Vj g"
 tgugctej gt'y cu'cdrg'vq'tglgev'pwnj { r qyj gugu': /32'cu'uki p'k'k'ecpv'kpetgcugu'kp'uvgr 'eqwpu"
 y gtg'uggp '*Vcdrg'5+lp'vj g'r ctvkr cpw'y j gp'eqo r gvkkxg'kpegpvkxg'u'y gtg'wugf 'cpf 'pqv'
 ecuj 'cpf lqt'r tk'g'kpegpvkxg'u0"Vj g'f'cw'uj qy p'qp'Vcdrg'5'cnuq'cpuy gtgf 'vj g's wguvqpu"

gxr gklo gpcnfi tqwr . 'vj g'lpkkcvkp'qh'dqj 'vj g'lpvgti tqwr "cpf 'rcti g'i tqwr "eqo r gvkxg"
 kpegpvxg'o qvxcvgf 'vj g'r ctvlekr cpw'lp'vj g'gxr gklo gpcnfi tqwr "vq'vcng'uki pkkcepv'('o qtg"
 uvr u'vj gp'vj g'r ctvlekr cpw'lp'vj g'eqpvqni tqwr 0"Vj gug'uki pkkcepv'uvr "kpetgcugu'y gtg"
 dgkpi "o cf g'd { 'vj g'r ctvlekr cpw'lp'vj ku'uwf { 'y j gp'ecuj "cpf lqt'r tk g'kpegpvxgu'y gtg'pqv"
 qhgtgf . 'uwi i gukpi "vj cv'ecuj "cpf lqt'r tk g'kpegpvxgu'o c { 'pqv'dg'pgeguuct { 'vq'o qvxcvg'vj g"
 r ctvlekr cpw'lp'r gf qo gvt'r tqi tco u'vq'kpetgcug'vj g'co qwpv'qh'r j { ukecn'cevkkv { 'vj g { 'ctg"
 cej kxkpi 0"

" Chgt'eqo kpi "vq'vj g'f gvtgo kpcvqp'vj cv'vj g'r gf qo gvt'r tqi tco "j cf "c'uki pkkcepv'
 ghgev'qp'vj g'r ctvlekr cpw. 'vj g'v'r gu'qh'eqo r gvkxkp'dgkpi "ko r ngo gpvgf 'y gtg'pcn | gf "vq"
 f gvtgo kpg'kh'cp { 'uki pkkcepv'f khtgpegu'y gtg'r tgugpv0"Vj g'tgxky gf 'tgugctej "j cf "
 uwi i guvgf 'vj cv'cm'v'r gu'qh'eqo r gvkxkp'eqwf "j cxg'cp"ghgev'qp'vj g'o qvxcv'kpcn'ngxnu'qh"
 vj g'r ctvlekr cpw*"Cmgp"(" J gej v."4226="Dct" { co ."4225="I ctekc" ("Vqt."422; ="Hgu'kpi gt."
 3; 76="Ucpgg'gv'cr0"3; ; ; ="Vcwt"(" J ctcentgy kel ."4226+0"Vj g'tgugctej "f qpg'd { "I ctekc"
 cpf "Vqt"*422; +uwi i guvgf 'vj cv'eqo r gvkxkp'co qpi "uo cmfi tqwr u'qh'gs wcn'cdkxv { 'y qwf "
 ngcf "vq'gpj cpegf 'ngxnu'qh'o qvxcv'kqp. "j qy gxgt. "pq'uki pkkcepv'f khtgpegu'y gtg'hqwpf "lp"
 vj g'v'r g'qh'eqo r gvkxkp'dgkpi "cf o kpvgtgf "cpf 'vj g'co qwpv'qh'uvr u'vj g'r ctvlekr cpw'y gtg"
 wnkpi 0"Vj g'eqo r gvkxg'kpegpvxg'kpvtxgpv'kpu'ko r ngo gpvgf 'f wtkpi "vj ku'uwf { 'y gtg"
 dcugf "qp'vj g'uwi i gukpu'qh'r tgxkqu'tgugctej gtu'lp'vj g'ctgc'qh'r gf qo gvt'r tqi tco u0"Rcu'
 tgugctej gtu'cpf 'vj gqtku'j cf "uwi i guvgf 'vj cv'eqo r gvkxkp'j cf "cp'kpetgcugf "ghgev'qp'cp"
 kpf kxk' wcn'u'o qvxcv'kpcn'ngxnu*"Cmgp"(" J gej v."4226="Dct" { co ."4225="I ctekc" ("Vqt."
 422; ="Hgu'kpi gt."3; 76="Ucpgg'gv'cr0"3; ; ; ="Vcwt"(" J ctcentgy kel ."4226+0"Vj g'tguwmu"
 tgi ctf kpi "vj g'eqo r gvkxg'kpegpvxg'hgcwtgu'lp'vj ku'uwf { 'uwi i guv'vj cv'vj gtg'ku'eqttgrcv'kqp"

dgwy ggp"eqo r gvkxkqp"cpf "o qvxcvqkp."cpf "hwtvj gto qtg."eqttgur qpf "y kj "y j cvr tgxkqwu"
tgugctej gtulj cxg'uwi i guvgf 0"*****

Uwo o ct { ""

" Vj g'f cvc"eqmgevfg "y cu'cpcn{| gf "wukpi "c'xctkvg{"qh'o gj qf u'kp'dqj "vj g'URUU"cpf "
O letquqhv'Gzegn'f cvc"cpn{uku'r tqi tco u0"Vj g'hqmjy kpi "eqo r ctuqpu'y gtg'wugf "hqt "vj g"
qxgtcm'cpcn{ugu'qh'vj g'f cvc<"Vj g'uvgr "f cvc'hqt "dqj "vj g"gzr gtko gpvcn' tqr "cpf "vj g"
eqptqni tqr "y gtg'eqo r ctgf "vj tqwi j qw'vj g'f wcvkqp"qh'gxtg {"'kpvgtxgpvkqp"qt'pqp/
kpvgtxgpvkqp'kp'vqcn"*Vcdng'3+"cpf "vj gp"eqo r ctgf "d{"ur gekhe'kpvgtxgpvkqp'v{r g"*Vcdng'4+."
vj g"gzr gtko gpvcn' tqr u'dcugkpg'f cvc'o gcuwtgu'y gtg'eqo r ctgf "v'vj gkt'uvgr "f cvc'hqt"
gcej "y ggn'vj g{"gzr gtkpegf "cp'kpvgtxgpvkqp"*Vcdng'5+:"cpf "vj g"gzr gtko gpvcn' tqr u'uvgr "
eqwpu'hqt"gcej "kpvgtxgpvkqp"y ggn'y gtg'eqo r ctgf "y kj "vj g"qj gt "v{r gu'qh'kpvgtxgpvkqp"
*pq'uki phekpeg+0""

" Vq'qdvckp"vj g'tguwmu'uj qy p'kp"Vcdng'u'3"cpf "4."r ctvlekr cpv'uvgr "eqwpu'y gtg"
gpvgtgf "kpv"vj g'O letquqhv'Gzegn'r tqi tco "y j gtg'vy q'vckngf ."kpf gr gpf gpv'v'guwu'y gtg"
eqpf wevg 0"Gcej "r ctvlekr cpv'j cf "wucdng'f cvc'hqt "vj gkt "dcugkpg'o gcuwtgu'cpf "hqt "vj g'htuv"
kpvgtxgpvkqp"y ggn0"Y j gp"eqo r ctkpi "vj g'vy q'i tqr u"*eqptqni'cpf "gzr gtko gpvcn' "vj g"
tguwmu"*Vcdng'3+"uwi i guvgf "vj cv'vj g"gzr gtko gpvcn' tqr "vqni'o qtg'uvgr u'vj gp'vj g'eqptqni"
i tqr 0"Y j gp"eqo r ctkpi "vj g'vy q'i tqr u"*eqptqni'cpf "gzr gtko gpvcn'eqttgur qpf kpi "y ggm"
qh'kpvgtxgpvkqp"cpf "pqp/kpvgtxgpvkqp."cm'dw'qpg"qh'vj g'v{r gu'qh'eqo r gvkxg'kpegpvkg"
kpvgtxgpvkqp"*uo cmi' tqr u'qh'gs wcn'cdkxv{ +o qvxcvfg "vj g'r ctvlekr cpw'v'uki phekcpv{"
kpetgcug'vj gkt'uvgr u"*ugg"Vcdng'4+0""

" Y j gp"cpn{| kpi "vj g"gzr gtko gpvcn' tqr "qpn{"*ugg"Vcdng'5+:"r ctvlekr cpv'uvgr "
eqwpu'y gtg'gpvgtgf "kpv"vj g'URUU'r tqi tco "y j gtg'r cktgf "vy q'vckngf "v'guwu'y gtg'f qpg"vq"

Ej cr vgt 'Hkxg<Eqpenwukppu'cpf 'Tgeqo o gpf cvkqpu'

Kpvt qf wevkqp''

" Vj g'co qwpv'qh'qxgty gli j v'cpf "qdug'cf wnu'eqpvkpwgu'vq'dg'c'r tqdrgo 'kp'vj g"
 Wpkvgf "Uvcv'f gur kg'vj g'o cp{ 'j gcnj "dgpghku'cuuqekcvf 'y kj 'hxxkpi 'c'r j { ulecm{ 'cevxg"
 rkguv{ ng'*Hgi cn'Ecttqm"Qi f gp"('Ewtv'p."4232=P EJ U."422: =WUF J J U."422: =
 Y ETHICET."422; +0"Rgf qo gvg't r tqi tco u'j cxg'dggp'ko r ngo gpvgf "cetqu'vj g'pvcv'p'cpf "
 j cxg'cf f kxkpcm{ 'r tqxkf gf 'tgugtej gtu'y kj 'gxkf gpeg'v'q'ui i gu'vj cv'vj gug'r tqi tco u'ctg"
 ghgevxg'y j gp'vj g{ "ctg'wugf "v'q'o qvxcv'g'r j { ulecn'cevxk{ 'kpetgcugu'kp'vj gk'wugtu'kp'uo cm'
 r qr wcvkqpu'd{ 'wukpi 'ecuj 'cpf lqt'r tk'g'kpegpv'xgu'kp'eqo dlpvcv'p'y kj 'vj g'hcwv'gu'o cf g"
 r quukdrg'd{ 'vj gug'r tqi tco u'*Hquvgt'gv'cr0"4232=Mcp' "gv'cr0"422; =XcpY qto gt'gv'cr0"
 4228+0"Y kj "o cp{ "go r nq{ gtu'j cxkpi 'rko kgf 'hwpf u.'vj gug'v'r gu'qh'r tqi tco u'o c{ "pqv'dg"
 kf gen'ht'v'cti gv'kpi 'c'rcti g'r qr wcvkqp0"kp'qtf gt'v'q'f gyto kpg'kh'vj gug'r tqi tco u'eqwf "
 ko r ngo gpvgf "co qpi 'c'rcti gt'r qr wcvkqp.'vj g'tgugtej gt'kuqrcv'g' 'vj g'eqo r gv'kxg'hcwv'gu"
 cuuqekcvf 'y kj 'vj gug'r tqi tco u'cpf 'f kf "pqv'wug'cp{ 'ecuj 'cpf lqt'r tk'g'kpegpv'xgu'v'q'cuukv'
 kp'o qvxcv'kqp0'

" Vj g'r ctv'ekr cpv'lp'vj g'uwf { "eqpf wevgf 'y gtg'c'uco r ng'qh'cf wnu'lp'vj g'y qtnr rceg"
 htqo . 'tgr tgugpv'kpi 'c'twtcn'O kf y guv'gp'eqo o wpkv{ 0"Vj g'r qr wcvkqp'uk'g'y cu'uo cmgt'vj cp"
 f guk'gf 'y j gp'eqpf wevkpi "cp{ "gZR gtlo gpv'dw'rcti gt'vj cp'gZR gev'g' 'y j gp'gzco kpkpi 'vj g"
 r qr wcvkqp'v'cti gv'gf 'ht'vj g'uwf { 0"Vj g'pwo dgt'qh'r ctv'ekr cpv'wugf 'ht'cpcn{ uku'lp"
 r qt'v'kpu'qh'vj g'uwf { 'tcpi gf 'htqo '58/62'f w'g'v'q'gzv'gtpcn'hcwv'qtu'chgevkpi 'vj g'ceewtce{ 'qh'
 vj g'f'cx'vj g{ 'j cf "eqmgev'g' 0"Vj g'pwn'j { r qvj gugu'y gtg<"

*3+"P wn'J { r qvj guk'<Vj gtg'y kn'dg'pq'uki p'k'k'ecpv'f k'htg'peg'kp'vj g'co qwpv'qh'v'qcn'
 ugr u'vcn'gp'd{ 'kp'k'kf wcn'vj cv'r ctv'ekr cv'g' 'kp'r gf qo gvg't r tqi tco 'y j gp"

eqo r gvkxg'kpegpvxgu'y gtg'wugf 'xgtugu'y g'co qwpv'qh'qvcn'uvgr u'vcnpg'd{ 'y g'
r ctvkr cpw'y j gp'pq'eqo r gvkxg'kpegpvxgu'y gtg'wugf 0'

*4+'P wniJ { r qvj guku<"Vj gtg'y kn'dg'pq'uki pklcepvf khtgpeg'kp'y g'co qwpv'qh'uvgr u'
vcnpg'd{ 'y g'r ctvkr cpw'y j gp'y g{ 'y gtg'gpi ci gf 'kp'uo cmi tqwr u'qh'gs wcn'cdkx{ "
cu'eqo r gvkxg'kpegpvxg'xgtugu'y g'co qwpv'qh'uvgr u'vcnpg'd{ 'y g'r ctvkr cpw'y j gp'
pq'eqo r gvkxg'kpegpvxgu'y gtg'wugf 0'''''''' " "

*5+'P wniJ { r qvj guku<"Vj gtg'y kn'dg'pq'uki pklcepvf khtgpeg'kp'y g'co qwpv'qh'uvgr u'
vcnpg'd{ 'y g'r ctvkr cpw'y j gp'y g{ 'y gtg'gpi ci gf 'kp'kpgti tqwr "eqo r gvkqp'cu"
eqo r gvkxg'kpegpvxg'xgtugu'y g'co qwpv'qh'uvgr u'vcnpg'd{ 'y g'r ctvkr cpw'y j gp'
pq'eqo r gvkxg'kpegpvxgu'y gtg'wugf 0''''''''

*6+'P wniJ { r qvj guku<"Vj gtg'y kn'dg'pq'uki pklcepvf khtgpeg'kp'y g'co qwpv'qh'uvgr u'
vcnpg'd{ 'y g'r ctvkr cpw'y j gp'y g{ 'y gtg'gpi ci gf 'kp'c'rti g'i tqwr "eqo r gvkqp'cu"
eqo r gvkxg'kpegpvxg'xgtugu'y g'co qwpv'qh'uvgr u'vcnpg'd{ 'y g'r ctvkr cpw'y j gp'
pq'eqo r gvkxg'kpegpvxgu'y gtg'wugf 0''''''''

*7+'P wniJ { r qvj guku<"Vj gtg'y kn'dg'pq'uki pklcepvf khtgpeg'kp'y g'co qwpv'qh'uvgr u'
vcnpg'd{ 'y g'r ctvkr cpw'kp'y g'zr gto gpvcni tqwr 'y j gp'y g{ 'y gtg'gpi ci gf 'kp'
uo cmi tqwr u'qh'gs wcn'cdkx{ "cu'eqo r gvkxg'kpegpvxg'xgtugu'kpgti tqwr "
eqo r gvkqp'cu'eqo r gvkxg'kpegpvxg0''

*8+'P wniJ { r qvj guku<"Vj gtg'y kn'dg'pq'uki pklcepvf khtgpeg'kp'y g'co qwpv'qh'uvgr u'
vcnpg'd{ 'y g'r ctvkr cpw'kp'y g'zr gto gpvcni tqwr 'y j gp'y g{ 'y gtg'gpi ci gf 'kp'
uo cmi tqwr u'qh'gs wcn'cdkx{ "cu'eqo r gvkxg'kpegpvxg'xgtugu'rti g'i tqwr "
eqo r gvkqp'cu'eqo r gvkxg'kpegpvxg0''

*9+P wniJ { r qvj guku<"Vj gtg'y kn'dg'pq'uki pkkhcepv'f khhgtgpeg'kp'yj g'co qwpv'qh'uvg' u"
 vcnmp'd{ 'y g'r ctvlekr cpw'kp'yj g'gzr gtlo gpvni' tqr 'y j gp'yj g{ 'y gtg'gpi ci gf 'kp"
 rcti g'i tqr 'eqo r gvkkqp'cu'eqo r gvkkxg'kpegpvxg'xgtugu'kpvti tqr 'eqo r gvkkqp'cu"
 eqo r gvkkxg'kpegpvxg0"

*: +P wniJ { r qvj guku<"kp'yj g'gzr gtlo gpvni' tqr 'yj gtg'y kn'dg'pq'uki pkkhcepv'f khhgtgpeg"
 kp'yj g'co qwpv'qh'dcug'kp'ug' u'vcnmp'd{ 'r ctvlekr cpw'xgtugu'yj g'co qwpv'qh'uvg' u"
 vcnmp'y j gp'uo cni' tqr u'qh'gs wni'cdk'v{ 'y gtg'wugf 'cu'eqo r gvkkxg'kpegpvxg'cpf "
 ecuj 'cpf lqt'r tk g'kpegpvxgu'y gtg'pqv'qh'htgf 0"

*: +P wniJ { r qvj guku<"kp'yj g'gzr gtlo gpvni' tqr 'yj gtg'y kn'dg'pq'uki pkkhcepv'f khhgtgpeg"
 kp'yj g'co qwpv'qh'dcug'kp'ug' u'vcnmp'd{ 'r ctvlekr cpw'xgtugu'yj g'co qwpv'qh'uvg' u"
 vcnmp'y j gp'kpvti tqr 'y gtg'wugf 'cu'eqo r gvkkxg'kpegpvxg'cpf "ecuj 'cpf lqt'r tk g"
 kpegpvxgu'y gtg'pqv'qh'htgf 0"

*32+P wniJ { r qvj guku<"kp'yj g'gzr gtlo gpvni' tqr 'yj gtg'y kn'dg'pq'uki pkkhcepv'
 f khhgtgpeg'kp'yj g'co qwpv'qh'dcug'kp'ug' u'vcnmp'd{ 'y g'r ctvlekr cpw'xgtugu'yj g"
 co qwpv'qh'uvg' u'vcnmp'y j gp'qpg'rcti g'i tqr 'eqo r gvkkqp'y cu'wugf 'cu'eqo r gvkkxg"
 kpegpvxg'cpf "ecuj 'cpf lqt'r tk g'kpegpvxgu'y gtg'pqv'qh'htgf 0"

Eqpenukpu'

" Vj g'eqpenukpu'f tcy p'itqo 'yj g'uwf { 'y gtg'iko kgf 'cu'yj g'r qr wv'kqp'uk' g'y cu"
 uo cni'cpf 'f wg'kp'r ctv'q'yj g'r ctvlekr cpw'gz'vcewttkewrct'cev'kk'ku'cpf 'r gf qo gvgt"
 o ckp'vpcpeg0"Vj g'v'gusu'eqpf wewgf 'yj tqwi j 'O letquq'v'Gzegni'cpf 'URUU'r tqi tco u"
 r tqxkf gf 'g'xkf gpeg'owi i guv'pi 'yj cv'r gf qo gvgt'r tqi tco u'y gtg'gh'ge'v'xg'y j gp'pq'ecuj "
 cpf lqt'r tk g'kpegpvxgu'y gtg'qh'htgf 'v'yj g'r ctvlekr cpw'0'

" Vj g'tgugctej gt'y cu'cdng'vq'qdvclp'ceewtcvg'tguwmu'd{'cpcn{| kpi 'vj g'f cvc'wukpi " dqvj 'O letquqlh'Gzegri'cpf 'URUU'cpcn{uku'r tqi tco u0"Vj g'uvgr 'eqwpu'hqt"dqvj 'vj g'dcugr'kpg" y ggn'icpf 'hktuv'y ggn'qhl'kpvgtxgpkqp'o c{'j cxg'dggp'j ki j gt'hqt'cmr'ctvlekr cpw'cu'yj g" r tqi tco 'y cu'pgy 'cpf 'gxgt {'r ctvlekr cpv'y cu'cdng'vq'ugg'vj gk'qy p'uvgr 'f cvc0"J qy gxgt." vj g'f khtg'ppegu'uggp'dgy ggp'dqvj 'vj g'eqpvtqni tqwr 'cpf 'vj g'gzr gtko gpvni tqwr . 'cpf 'vj g' gzr gtko gpvni tqwr 'cpf 'vj gk'dcugr'kpg'f cvc.'uwi i guv'y cv'y g'eqo r gvkkxg'hgcwtgu" cuuqekcvf'y kj 'r gf qo gvg'r tqi tco u'ecp'dg'wugf 'vqqu'vj cv'o qvxcvg'r ctvlekr cpw'vq" uki pkl'ecpv{'kpetgcug'vj gk'r j {ulecni'cevkkv{'y j gp'ko r ngo gpv'f'kp'c'xctk'v{'qh'ugw'kpi u0" Hwtvj gto qtg.'vj g'eqpvtqni tqwr u'uvgr 'eqwpu'f cvc'y cu'cpcn{| gf 'y j gp'pq'eqo r gvkkxg" hgcwtgu'qt'ecuj 'cpf lqt'r tk'g'kpegpv'xgu'y gtg'q'htg'gf 'cpf 'vj g{'uj qy gf 'pq'uki pkl'ecpv" kpetgcugu'kp'r j {ulecni'cevkkv{0"Vj g'tgugctej gt'f guki pgf 'vj g'gzr gtko gpv'kp'c'y c{'vj cv'yj g" eqo r gvkkxg'kpegpv'xg'hgcwtgu'cuuqekcvf'y kj 'r gf qo gvg'r tqi tco u'eqwf'dg'kuq'w'v'f'cpf " cpcn{| gf 'tgi ctf kpi 'vj gk'ghge'v'x'gpguu0"Vj g'y cu'f qpg'cu'c'tguw'v'q'h'y g'tgeqo o gpf cvk'qpu" vj cv'y gtg'i kxgp'd{'qvj gt'tgugctej gt'u'y j q'j cf 'gzr mtgf 'uko kxt'r tqi tco u'cpf'y j q'y gtg" uwi i guk'kpi 'vj cv'c'uwwf {'pggf gf 'vq'dg'f qpg'kp'qtf gt'vq'f gvgto kpg'y j lej 'grgo gpw'y gtg" t'gur qpukdr'g'hqt'vj g'r j {ulecni'cevkkv{'kpetgcugu'dgkpi 'uggp0

Tgeqo o gpf cvk'qpu"

" Kp'qtf gt'vq'ej cpi g'yj g'tgpf'dgkpi 'uggp'tgr'v'f'vq'co qwpv'qh'qdgug'qt'qxgty gli j v' cf wnu'ewtgpv'{'t'gukf kpi 'kp'vj g'Wpk'g'f'U'cvgu.'r j {ulecni'cevkkv{'r tqi tco u'y gtg'gzco kpgf " vq'f gvgto kpg'vj gk'ghge'v'x'gpguu0"Qxgtcmr'gf qo gvg'r tqi tco u'j cxg'dggp's v'k'g'r qr w'ct" co qpi 't'gugctej gt'u'y j gp'f gvgto k'kpi 'ghge'v'x'g'y c{'u'vq'o qvxcvg'k'p'f'k'k'f'w'nu'vq'kpetgcug" vj g'co qwpw'q'h'r j {ulecni'cevkkv{'vj g{'cej k'x'g0"Vj g'tgeqo o gpf cvk'qpu'tgi ctf kpi 'vj g" h'k'f'kpi u'kp'vj g'uwwf {'y gtg'dcugf 'qp'v'y q'r tqdrgo u0"Vj g'hktuv'r tqdrgo 'cf f'tgu'g'f'd{'vj ku'

uwf { 'y cu'vj g'co qwpv'qh'qdgug'qt "qxgty gi j v'cf wmu'tgukf kpi 'kp'vj g'Wpkvgf "Ucvgu'cu'c"
 tguwv'qh'pqv'i gwkpi "gpqwi j 'cevkxk\0"Vj g'tgugctej gt 'f lueqxtgf 'cp'cf f kkpnci'r tqdrgo "
 y kj kp'vj g'r gf qo gvg'r tqi tco u'vj cvj cf "dggp'uwf kgf ."cu'vj g'o clqt\ 'qh'vj g'r tqi tco u'
 dgkpi "cpnc\ gf 'j cf "qh'gtgf "equv\ 'kpegpv\kxgu'vj cv'eqwf 'kpetgcug'vj g'tkum'qh'kpf kxf wcu"
 kphkvpki 'j cto "v'vj go ugrxgu'qt "qp'qvj gtu"*O crj qtv."4232+"cpf 'hwtvj gto qtg."eqwf "pqv'dg"
 y kf gn\ 'wugf "d { "go r nq { gtu'cpf 'j gcnj ectg'cf xqecvgu'f wg'v'vj g'j ki j "equ'cuuqekv\kp"
 *WUDNU."4234+0"Hwtvj gt "eqpenwukqpu'cpf 'tko kcvkqpu'i kxgp'd { 'vj g'tgugctej gtu.'tgi ctf kpi "
 r tgxkqu'uwf kgu'f qpg'qp'r gf qo gvg'r tqi tco u.'y gtg'vj cvj g { "eqwf "pqv'f gvgto kpg'y j kej "
 hgcwtgu'qh'vj g'r tqi tco u.'y gtg'r tko ctk\ 'tgur qpukdr'hqt'o qv\kvpki 'vj g'r ctv\ekr cpw'vq"
 kpetgcug'vj gk'r j { ulecn'cevkxk\ *Hquvgt'gv'crf"4232="Mcpj "gv'crf"422; ="XcpY qto gt'gv'crf"
 4228+0""

" **Tgeqo o gpf cvkqpu'hqt'lo r ngo gpvcvqp0**Tgugctej 'j cu'dggp'f qpg'qp'vj g"
 tgrv\kqpuj kr 'dgwy ggp'r gf qo gvg'r tqi tco u'cpf 'vj g'r j { ulecn'cevkxk\ 'kpetgcugu'dgkpi "
 gzj kdkgf "d { 'vj gk'r ctv\ekr cpw"*Hquvgt'gv'crf"4232="Mcpj "gv'crf"422; ="XcpY qto gt'gv'crf"
 4228+0"Vj tqwi j qw'vj g'tgugctej 'tgxky gf "qp'r gf qo gvg'r tqi tco u.'vj g'tgugctej gtu'j cf "
 uko kct'tko kcvkqpu'cuuqekv'f 'y kj 'vj gk'uwf kgu'qt 'tgxky u.'uwi i gwkpi 'vj cvj g { 'y gtg"
 wpcdr'vq'kuqr'v'vj g'r tqi tco 'hgcwtgu'tgur qpukdr'hqt'o qv\kvpki 'vj g'r ctv\ekr cpw'vq"
 kpetgcug'vj gk'uvr'co qwpw"*Hquvgt'gv'crf"4232="Mcpj "gv'crf"422; ="XcpY qto gt'gv'crf"
 4228+0"Vj g'tgugctej gtu'y gtg's wguv\kqpkpi 'y j gvj gt'vj g'qh'gtkpi "qh'ecuj 'cpf kq'r tk g"
 kpegpv\kxgu.'vj g'i qcn'ugv\kpi 'hgcwtg.'vj g'lo r ngo gpvcvqp'qh'c'eqo r gw\kxg'kpegpv\kxg'qt'c"
 eqo dlpcv\kq'qh'vj gug'hgcwtgu'y gtg'r tko ctk\ 'tgur qpukdr'hqt'o qv\kvpki 'vj g'r ctv\ekr cpw'
 vq'vcng'o qtg'uvr u"*Hquvgt'gv'crf"4232="Mcpj "gv'crf"422; ="XcpY qto gt'gv'crf"4228+0"
 Hwtvj gt'tgugctej 'tgi ctf kpi 'ecuj 'cpf kq'r tk g'kpegpv\kxgu'dgkpi "qh'gtgf 'cpf 'k'y cu"

f gvgto kpgf "y cvd{ "f qkpi "uq."qpg"o c{ "r tqf weg'wphcxqtcdng't guvnu"O cij qtvc."4232-0"K'
y qwf "dg'uwi i guvgf "y cv'kpf kxf wcu'cf o kpkvgtkpi "y gug'v{ r gu'qh'r tqi tco u'wug'o gyj qf u"
qyj gt"y cp"ecuj "cpf lqt "r tk g'kpegpvxgu"vq"o qvxcvg"y gk "r ct vkr cpw0""

" Vj g'tgugctej "f qpg'qp"eqo r gvkkxg"o qvxcvqp"uwi i guvgf "y cv'uo cmf tqw u'qh'gs wcu'
cdkx{ "eqwf "gpj cpeg"o qvxcvqp"i ctek"("Vqt."422; +"cmppi "y kj "rti g'i tqw "

eqo r gvkkqp"cuq"j cxkpi "cp"ghge'vqp"cp"kpf kxf wcu'o qvxcvqp"Hgukpi gt."3; 76-0"

Hwtj gt"kp'kpi u"qp"eqo r gvkkxg"o qvxcvqp"uwi i guvgf "y cv'kpvgti tqw "eqo r gvkkqp"y qwf "

etgcvg"eqqr gtcvqp"cpf "j cxg"cp"kpetgcugf "ghge'vqp"o qvxcvqp."cumieqo r gvkkqp"cpf "

qxgtcm'gplq{ o gpv"cmgp"("J gej v."4226="Dct"[co ."4225="Ucpgg"gv'cu0"3; ; ; ="Vcwg"(" "

J ctcentgy kel . "4226-0"Vj gug'r kgegu'qh'tgugctej "y gtg'wugf "v" f guki p" c" r gf qo gvg' r tqi tco "

y cv'ghge'vgn{ "o qvxcvgf "y g' r ct vkr cpw"vq" kpetgcug"y g"co qwpv'qh'r j { ulecn'ce'vkv{ "y g{ "

y gtg'i gv'kpi 0"Dcugf "qp"y g'kp'kpi u"y cv'y g"eqpvtqni tqw "f k' "pqv"j cxg'uki pkkcpv"

kpetgcugul'p"y gk "uvr "eqwv. "y g'tgugctej gt"y qwf "cuq"uwi i guv'y cv'y gtg'ku" c"pggf "hqt" c"

r gf qo gvg' r tqi tco "cf o kpkv'cvqt "vq"o qpkqt "y g' r tqi tco "cpf "ug'v'w "cp{ "kpvtxgpv'kpu"

dcugf "qp"r cu'r tce'vkg0'

" Tgeqo o gpf cvkqpu'ht "r tqo qv'kq0"K'y qwf "dg"y g'tgeqo o gpf cvkqp"qh'y g"

tgugctej gt"y cv'o qtg"go r m{gtu"cpf "j gcnj ectg"cf xqecvgu'kpkcvgf "cpf "r tqo qvgf "y gug"

v{ r gu'qh'r gf qo gvg' r tqi tco u0"J gcnj "kpuwtcpeg"r tqxkf gtu'uj qwf "dg"vcti gvgf "cu"cp"gpvkv{ "

y cv'eqwf "eqxgt "y g'equ'qh'y g' r gf qo gvg' f gx'kugu"cpf "cp{ "cuuqekcvgf "o go dgtuj kr "hgu"

r ct vkr wct "vq"y g' r tqi tco "dgkpi "ko r ngo gpvgf 0"Kj gcnj "kpuwtcpeg"eqo r cpk'gu"eqxgtgf "

y gug"cuuqekcvgf "hgu."j gcnj ectg"cf xqecvgu"cpf "go r m{gtu"y cp'kpi "vq"cf o kpkvgt "y gug"

r tqi tco u'y qwf "dg"cdng"vq"vcti gv'c'rti gt"r qr w'v'kq0""

" **Tgeqo o gpf cvkqpu'ht 'hwt vj gt 't guctej 0'**Vj gtg'ctg'o cp{ 'eqtr qtcvkqpu'ewttgpnf " ko r ngo gpvki 'r gf qo gvg't'r tqi tco u'cetquu'vj g'pcvkqp0'Mgo r u.'O kf y guvtp'Rwdrlk " Uej qqnu.'yj g'Xkti kp'Eqtr qtcvkqp.'Ugewtkv{ 'Ugt xleg'Hgf gtcn'Etgf kv'Wpkqp'cpf "eqo o wpkkgu" rkn'g'Dgzct'Eqwv{ . 'j cxg'dgi wp'v'ko r ngo gpv'r gf qo gvg't'r tqi tco u'y kj 'yj g'j qr g'vj cv" o qtg'qh'vj gk'go r m{ ggu'qt'eqo o wpkv{ 'o go dgtu'y kn'uctv'v'f' i gv'vj g'tgeqo o gpf gf " co qwpw'qh'r j { ulecn'cevkxkv{ '*Dq{ eg.'4233+0'Dgzct'Eqwv{ 'j cu'pgctn{ '722'eqo o wpkv{ " o go dgtu'vj cv'ctg'ewttgpnf "gptqmgf 'kp'vj g'Xkti kp'J gcnj O krgu'r gf qo gvg't'r tqi tco 0" Rrcegu'rkng'QEJ UP GT'J gcnj 'u{ uvgo . 'c'Nqwkukpc"dcugf 'j gcnj ectg'u{ uvgo . 'j cxg" 32.222- 'go r m{ ggu'y kj ': 3' 'gptqmgf 'kp'vj g'Xkti kp'J gcnj O krgu'r tqi tco '*Dq{ eg.'4233+0" Cp{ 'tgeqo o gpf cvkqpu'dgkpi 'o cf g'd{ 'vj g'tguctej gt'y gtg'iko kvgf 'v'vj g'r qr wcvkqp" uco r ng'wugf 'kp'uwf { 0'F cvc'vcngp'htqo 'vj g'qti cpk cvkqpu'kvgf . 'cpf "qj gtu'eqpf wvki " ulo kct'v{ r gu'qh'r gf qo gvg't'r tqi tco u.'uj qwf "dg'cpcn{ | gf 'uq'c'icti gt'uco r ng'uk' g'eqwf "dg" wugf 'hqt'cf gs wcv'g'tguctej 0'Eqo r gvkkxg'kpegpvkgu'eqwf "dg'eqo r ctgf "v'ecuj kpf "qt" r tk'g'kpegpvkgu'tgi ctf kpi 'vj g'gh'gev'vj g{ 'j cxg'qp'cp'kpf kxf wcn'u'o qvkkcvkqp0'k'f'qlpi " uq.'hwt vj gt'tgeqo o gpf cvkqpu'tgi ctf kpi 'dgu'r tcevegu'ht'r gf qo gvg't'r tqi tco " ko r ngo gpvcvkqp"eqwf "dg'o cf g0""

Qdugtxcvkqpu''

" Y j gp'mqmkpi 'cv'Vcdng'4.'qdugtxcvkqpu'y gtg'o cf g'tgi ctf kpi 'vj g'tguwu'qh'vj g" cpcn{uku0'Vj g'r ctvek cpw'lp'vj g'eqvtqni tqwr 'j cf "c'uvgr 'o gcp'qh'; .45489'hqt'vj gk'htuv" y ggn'qh'pqp/kpvtxgpvkqp'cpf 'hqt'vj g'hqmqy kpi 'y ggm'qh'pqp/kpvtxgpvkqp'vj g'o gcp'qh" vj g'i tqwr 'f getgcugf 0'Vj g'o gcp'co qwpv'qh'uvgr u'hqt'vj g'eqvtqni tqwr 'f wtkpi 'y ggn'ly q" y cu'9.638072'cpf 'f wtkpi 'y ggn'ly tgg.'vj gtg'uvgr 'eqwv'o gcp'y cu'9.547053'*ugg'Vcdng'4+0"

The researcher further explored the change in the control group's step count means for non-intervention weeks.

Observations regarding baseline measures. The first observation was that over time, individuals using pedometers without interventions experienced a decrease in steps or physical activity. The decrease could have been due to the fact that program was new, and it triggered an increase in motivation for the participants equally in both groups, as they were able to view the amount of steps they took on their pedometers and when they logged into their online accounts. The excitement associated with the introduction of new programs, similar to the one used in the study, could have also motivated the participants in both groups to take more steps and therefore have “higher than actual” baseline means.

In order to have eliminated or decreased the limitations associated with the excitement of the new program, the researcher would have liked to collected data from the participants for two weeks or up to a month, and used that data for the participant's baseline measures. The excitement levels of the participants in both groups would have most likely decreased after the first two weeks of the program (see Table 2), getting a more accurate measure, however, even if the measures of baseline were “higher than actual” the participants in the experimental group still took significantly more steps during the intervention weeks then during their baseline week. The program used in the study was not effective when attempting to increase the participant's steps unless the competitive features were also used to trigger or increase motivation.

Observations regarding intergroup theory. A third observation was made regarding the week of intergroup competition as competitive incentive (see both Tables 2

and 3). The participants in the experimental group had their highest mean step amount of 11, 645.62 and lowest p value of .0053 during the intergroup competitive incentive when compared to the control group and also had their highest mean step amount of 11,239.31 and lowest p value of .002 for this type of competitive incentive when compared to their own baseline steps. Although no significant differences were found when comparing the types of competition, it was observed that the participants had their highest step count means during the intergroup competitive incentive.

Observations regarding participant response. Additional observations made by the researcher were that the participants had an overwhelmingly positive response to the program. Along with emailing the researcher about how they had begun to make lifestyle changes such as: Parking further from shopping establishments, walking to the mailbox to get the mail, going for a walks with loved ones, and having increased passion for exercise; participant's from both groups seemed to have an overall positive attitude towards the others involved in the program and were making several social contacts with each other throughout the workday as a result. The researcher would have liked to collect qualitative data during the study as well, but the sample population that conducted the pilot trial of the program was too small to set up any valid research prior to the pedometer program being implemented and the study beginning.

Summary

Pedometer programs similar in design to the one conducted by the researcher could be implemented across the United States, to increase the amount of adults currently getting the recommended amount of physical activity. Through conducting the experiment, the researcher observed the participants of the experimental group exhibit

significant increases in their physical activity when compared to their own baseline measures and when compared to the control group. Furthermore, the researcher did not offer participants from either group cash and/or prize incentives. Knowing that pedometer programs can be effective without having to offer cash and/or prize rewards protects participants from getting the “winning at any cost” mentality (Malhorta, 2010) and additionally allows for healthcare advocates and employers to target a larger population to increase the amount of physical activity they are getting. Once healthcare advocates and employers know that these programs are both effective and affordable, implementation will grow, resulting in an increase in the amount of adults getting the recommended amounts of physical activity and a decrease in the amount of overweight or obese adult’s populating the United States. The research, although limited to a small sample size, suggests that cash and/or prize incentives are not necessary to motivate the participant’s in pedometer programs to significantly increase the amount of physical activity they are achieving.

References

- Allen, N. J., & Hecht, T. D. (2004). The romance of teams: Toward an understanding of its psychological underpinnings and implications. *Journal of Occupational and Organizational Psychology*, 77, 439-461. Retrieved from <http://ezproxy.mnsu.edu/login?url=http://search.proquest.com/docview/199407496?accountid=>
- Bar-Yam, Y. (2003). Complex systems and sports: Complex systems insights to building effective teams [PDF document] Retrieved from <http://necsi.org/projects/yaneer/SportsBarYam.pdf>
- Boyce, C. (2011, October). Resource training and solutions & Virgin HealthMiles. P. Imholte (Chair), "Exploring cost-saving strategies to fund employee health and wellness programs" Symposium conducted at Cold Spring Center, St. Cloud, MN.
- Festinger, L. (1954). A theory of social comparison processes. *Human Relations*, 7, 117-140, doi:10.1177/001872675400700202
- Flegal, K. M., Carroll, M. D., Ogden, C. L., & Curtin, L. R., (2010). Prevalence and trends in obesity among US adults. *Journal of American Medical Association*, 303, 235-41. Retrieved from PubMed database PMID: 20071471
- Foster, D., Linehan, C., & Lawson, S. (2010). Motivating physical activity at work: using persuasive social media extensions for simple mobile devices. *Lincoln Social Computing Research Centre (LiSC)*. Retrieved from http://eprints.lincoln.ac.uk/3153/1/shortpaper_mobileHCI_DFoster_CameraReady.pdf

- Garcia, S. M., & Tor, A. (2009). The N-Effect: more competitors, less competition. *A Journal of the Association for Psychological Science*, *20*, 871-877. Retrieved from www.personal.umich.edu/~smgarcia/pubs/n-effect.pdf
- Johnson, D. W., & Johnson, R. T. (1999). Making Cooperative Learning Work. *Theory Into Practice*, *38*, 67-73.
- Kang, M., Simon, M. J., Barreira, T. V., Lee, J-O. (2009). Effect of pedometer-based physical activity interventions: a meta-analysis. *Research Quarterly for Exercise and Sport*, *80*, 648-655.
- Malhotra, D. (2010). The desire to win: The effects of competitive arousal on motivation and behavior. *Organizational Behavior and Human Decision Processes*, *111*, 139-146. doi:10.1016/j.obhdp.2009.11.005
- National Center for Health Statistics. (2008). *Percent of adults who engage in no leisure-time activity*. Retrieved from http://healthindicators.gov/Indicators/Leisure-time-physical-activity-none-percent_1313/National_0/Profile/Data
- Stanne, M. B., Johnson, D. W., & Johnson, R. T. (1999). Does competition enhance or inhibit motor performance: A meta-analysis. *Psychological Bulletin*, *125*, 133-154. doi:10.1037/0033-2909.125.1.133
- Tauer, J. M., & Harackiewicz, J. M. (2004). The effects of cooperation and competition on intrinsic motivation and performance. *Journal of Personality and Social Psychology*, *86*, 849-861. doi:10.1037/0022-3514.86.6.849
- Triano, R. P., Berrigan, D., Dodd, K. W., Masse, L.C, Tilert, T., & McDowell, M. (2008) Physical activity in the United States measured by accelerometer. *Medicine and Science in Sports and Exercise*, *40*, 181-188.

- Tudor-Locke, C., & Bassett, D. JR. (2004) How many steps are enough: Preliminary pedometer indices for public health. *Journal of Sports Medicine* 34, 1-8.
- Tudor-Locke, C., Johnson, W. D., & Katzmarzyk, P. T. (2011) Relationship between accelerometer-determined steps/day and other accelerometer outputs in U.S. adults. *Journal of Physical Activity and Health*, 8, 410-419.
- United States Department of Health and Human Services. (2008). *Physical activity guidelines advisory committee report*. Retrieved from <http://www.health.gov/paguidelines/pdf/paguide.pdf>
- United States Department of Health and Human Services. (2010). *The Surgeon General's vision for a healthy and fit nation*. Rockville, MD: Author.
- United States Department of Labor, Bureau of Labor Statistics. (2012). *Labor force statistics from the current population survey*. Retrieved from <http://www.bls.gov/web/empsit/cpseea01.htm>
- VanWormer, J. J., Pronk, N. P., & Boucher, J. L. (2006). Experience analysis of a practice based, online pedometer program. *Diabetes Spectrum*, 19, 197-200. Retrieved from <http://spectrum.diabetesjournals.org/content/19/4/197.full>
- World Cancer Research Fund and American Institute for Cancer Research (2009). Policy and action for cancer prevention. *Food, nutrition, and physical activity: A global perspective*. Washington DC: ACIR.

