o è è i è

h mi é 4 rl 4r nuou n(m, l nd t u én(m, 4énuou n(m mé vut u én(m l m vur eu m cmtm(m pmvnevdom AcpC

) o os de 7; cas collicés dans le se vice de neu olocie du Hent e Oos italie des m écialités*

s rl mr nuou ni, l nd t u éni, ménuou ni dt l vu t u éni mdé(vm u pmvnevdocmt u(vur eu n

)a–out 7; cases ca the ed in neu olocical de a t ent of the Oos ital m ecialities*

h(ém(v @

E–de ah ane Moula e[3]. E ssatou l io [3]. Eh ed Siddou Moha ed L hadhi[3]. ma MV l adah[3]. Mouha adou l iaca ana[3]

h(ém(vi uvvm ut l dt é@ E ssatou l io
me vice de Neu olocie
Hent e Oos italie des m écialités)HOm* Nouakchott Mau itanie
J/ ail@astoudio so D ce ail0co

mv)ri m @

[3] me vice de Neu olocie. Hent e Oos italie des m écialités)HOm*de Nouakchott. Mau itanie

tumeéofr

mou is le @37 2614239
Ecce té le @3612514 23:

RA n A

outrd cumo A

Mc vj tqo dqug ygkpgxug egtgdtcng)a' D- guvxpg xti gpeg pgxtqmqi ks xg ycuexnckt g1Fmg guv ectcevgtkugg r ct nfg vtg«o g f kygtukvg f g uc r tgugpvcvkqp erkpks xg gv f g ugu gvkqmqi kgu1 Eg o xnvkr ngu hcevgxtu f g r tgf kur qukvkqp qpv gvg kf gpvk«kgu gv f qkygpv g«vtg tgej gtej gu nqtu f x dknc p gvkqmqi ks xg1

ecunfi A

Mg dxv f g pqvtg vtcyckn gvckv r tkpekr cngo gpv f g f g»kpkt ng r tq»kn gr kf go kqmqi ks xg gv f fgvxf kgt ngu r ctvkexnctkvgu erkpks xgu' gvkqmqi ks xgu gv gyqnxvkygu f g nc a' D f cpu nc r qr xncvkqp o cxtkvcpkgppg1

MauAtna éeuén Aui r de A

]n ufci kv f fxpg gvxf g f guetkr vkyg vtcpuygtucng eqo r tgpcpv <J r cvkgpvu j qur kvcnkugu cx ugtykeg f g pgxtqmqi kg f x DL Uf xtcpvxpg r gtkqf g f g : cpu cmcpvf g lcpykgt : 82; ĉ f gego dtg : 82<1

RA uau A

Mc«g f g pqu r cvkgpvu ufgej gnqppckv f g 2= ĉ I : cpu cyge xpg o q, gppg f g 9B cpu1Mg ug g hgo kpkp gvckv r tgf qo kpcpv cyge xp ug tcvkq f g : 'J 1Mg vcdngcx erkpks xg gvckv uxdcki x f cpu ; B'<3 f gu ecu1Mc u, o r vqo cvqmqi kg gvckv yct kgg gv pqp ur gek«ks xg' hckvg f g egr j cngu <<'J 3 ' uki pgu hqecx <; ': 3 ' etkugu eqo kvkcngu : I 'I 3 ' vtqxdngu f g nc eqpuekgpeg 29'=3 1 Mc vqr qi tcr j kg f gu vj tqo dqugu ygkpgxugu egtgdtcngu gvckv f qo kpgg r ct nc nqecnkucvkqp cx pkygcx f x ukpxu uci kvcnuxr gtkgxt f cpu 9B'; 3 ' ng ukpxu f tqkv f cpu 2B'; 3 ' ukpxu ncvgtcnf cpu 2<'23 ' gv ngu ygkpgu r tqhqpf gu f cpu 28': 3 1 Mgu gvkqmqi kgu gvckgpv r qn, o qtr j gu gv uqxygpv eqo dkpggu1Mgu ecxugu i, pgeq. qduvgvtkecngu gv kphgevkgxugugvckgpv r tgf qo kpcpvgu cyge xpg

rtgycngpeg tgurgevkyg f g 9B'9 gv 9: ': 3 1Ecpu nc o clqtkvg f gu ecu)<<'; 3 -' nfgyqnxvkqp gvcku dqppg' cyge xpg j gr ctkpqvjgtcrkg tgnc, gg rct cpvkykvco kpg z gv eqxrngg ĉ nc nkpgukvjgtcrkg1

Croc mo A

Mgu ectcevgtkuvksxgu f g nc a' D f cpu pqvtg gvxf g ug fkuvkpixgpv f gu f qppggu f g nc nkwgtcvxtg rct xpg htgsxgpeg gngygg f g nc a' D f x rquv.rctvxo gvf gu ecxugukphgevkgxugu1

a ué i o4 @h o –ose veineuse cé é– ale Pnfections b RV gost/ a tu Mau itanie

he évdi é

outrd cumo A

Dgtgdtcnygpqxuvjtqo dquku)a' D- ku c ycuexnct pgxtqnqi le go gti gpe, 1]vkuej ctcevgtk gf d, vjg ú vtgo g fkygtukv, qh kvu enkphecn rtgugpvcvkqp cpf gvkqnqi kgu1 N xnvkrng rtgfkur qukpi hcevqtuj cyg dggp kf gpvkvkgf cpf uj qxnf dg kpyguvkicvgf f xtkpi vjg gvkqnqi lecntgykg 1

ecume A

aj g rxtrqug qh qxt qtm cu o ckpn, vq f g»kpg vjg grkf go kqnqi lecnrtq»kng cpf vq uvxf, vjg enkphecn gvkqnqi lecn cpf gyqnxvkqpct, rctvkexnctkvkgu qh a' D kp vjg N cxtkvcpkcp rqrxncvkqp1

Paumou éaodé Meui rd uA

aj ku ku c etquu.ugevkqpcn f guetkrvkyg uvxf, kpenxfkpi <J rcvkgpvu cv vjg pgxtqnqi, fgrctvo gpv qh vjg urgekcnkgu j qurkvcn hqt c rgtkqf qh : ,gctu htqo vcpxct, : 82; vq Egego dgt : 82<1

Re u A

aj g ci g qh qxt rcvkgpvu tcpi gf htqo 2= vq I : ,gctu qnf kvj cp cygtci g ci g qh 9B1aj g hgo cng cu f qo kpcpv kvj c ug tcvkq qh: 1 1aj g enkphecnrkevxtg cu uxdcexvg kp ; B1<3 qh vjg ecugu1aj g u, o rvqo cvqnqi, cu yctkgf cpf pqpurgekxe' o cf g qhj gcf cej g <<1 3 ' hqecn ukipu <; 1 3 ' ugkxtgu : I 1 3 ' kphgevkqxuu, pf tqo g : B'23 ' fkuqtf gtu qheqpuekqxupguu 291=3 1 aj g vqrqitcrj, qh vjg egtgdtcn ygpqxu vjtqo dquku cu f qo kpcvgf d, nqecvkqp cv vjg uxrgtkqt uci kvvcnukpxu 9B1 3 ' 2B1 3 uvtckij vukpxu' ncvgtcnukpxu 2<123 ' cpf vjg f ggr ygkpu 281 3 1aj g gvkqnqi kgu gtg rqn, o qtrj ke cpf qhvgp eqo dkpgf 1 H, pgeqnqi le.qduvgvtke cpf kphgevkqxu ecxugu gtg rtgf qo kpcpv kvj c tgurgevkyg rtgycngpeg qh 9B19 cpf 9: 1 3 1]p vjg o clqtkv, qh ecugu)<<1 3 -' gyqnxvkqp cu iqqf kvj c j grctkp tgnc, gf d, cpvkykvco kp z vtgcvo gpv eqxrngf kvj rj, ukqvjgtcr, 1

Croc mo A

aj g ej ctcevgtkuvkeu qh Da' kp qxt uvxf, fkhngt htqo vjg f cvc kp vjg nkwgtcvxtg d, c j kij htgsxgpe, qhvjg rquvrctvxo Da' cpf kphgevkqxu ecxugu1

m uvl @He e– alvenousth o –osis J Np infections gost a tu Mau itania0

outrd cumo

Mc vjtqo dqug ygkpgxug egtgdtcng)a' D- ug f g»kpkv rct nfqduvtxevkqp f fxpg ygkpg egtgdtcng qx f fxp ukpxu ygkpgx́ 1Fng eqpuvkvxg xpg xti gpeg pgxtqycuexnckt g gvtgrtgugpvg gpykt qp 8'<3 f gu ceekf gpvu ycuexnckt gu egtgdtcx́ ´2 1Mc a' D ug ectcevgtkug rct uc itcpf g fkygtukvg enkpksxg uqxygpv uqxteg f fgttcpeg f kci. pquvksxg gv f g tgvctf vjgtcrgxvksxg´ :¨ 1Dfguv xpg rcvj qnqi kg itcyg cyge xpg o qtvcnkvg gpeqtg gngygg' gv sxk rgxv gpvtckpgt f gu ugsxgnngu ko rqtvcpvgu1 Dqpvtckt go gpv ĉ nfceekf gpv kuej go ks xg egtgdtcnctvg. tkgn ngu gvxf gu grkf go kqnqi ks xgu eqpegtpcpv nc a' D uqpv nko kvggu Kngu ugtkgu ngu rnxu ko rqtvcpvgu uqpv

gxtqrggppgu´ 9.;.<ë ' cukcvkxgu´ =.B qx pqtf.co g. tkeckpgu´ Ï¨ 1Fp Clrtkxg' vtgu rgx f g ugtkgu qpv gvg tcr rqtvggu´ J.28' 1

Egycpv ng tgetxvgo gpv g egrvkqppgnf g a' D f cpu pqvtg ugtykeg egu f gtplgtgu cppggu' kn pqxu c r rctx rgtvkpgpv f g pqxu kpvgtguugt ĉ egwg r cvj qnqi kg c»kp f g tgej gtej gt xp hcevgxt ur gek»kxg)gpf qi gpg- rqxycpv g r nkxgt egwg kpekf gpeg j qur kvc. nkgtg etqkuucpvg1 Mg dxv f g pqvtg vtcyckn gvckv f g f g»kpkt ng r tq»kn gr kf go kqnqi kxg' gv f fgvxf kgt ngu r ctvkexnctkvgu enkpkxgu' gvkqnqi kxgu gv gyqnxvkygu f g nc a' D ej g ngu r cvkgpvu j qur kvcnkugu f cpu ng ugtykeg f g pgxtqnqi kg f x DL U f g Oqxcnej qvv gv f fkpkvkgt xpg uvtcvgi kg r tgygpvkyg f gu r tkpekr cngu ecxugu sxk qpv gvg kf gpvk»kggu1

Mau Atna éeún Aui r de

Oqvtg gvxf g ufguv f gtqxngg f cpu ng ugtykeg f g pgxtqnqi kg f x Dgpvtg L qur kvcnkgt f gu Ur gekcnkvgu f g Oqxcnej qvv1Fng c r qtvg uxt ngu f quukgtu f gu r cvkgpvu j qur kvcnkugu r qxt a' D cx eqxtu f g nc r gtkqf g f g lcp. ykgt : 82; ĉ f gego dtg : 82<1Dgwg gvxf g c gvg tgcnk ugg gp f gx´ r ctvkgu uxt xpg r gtkqf g f g 8: cpu A

. bpg gvxf g f guetkr vkyg tgvtqur gevkyg r qtvcpv uxt ngu r cvkgpvu j qur kvcnkugu f g lcpykgt : 82; ĉ o ck : 82<

. bpg gvxf g f guetkr vkyg r tqur gevkyg r qtvcpv uxt ngu r cvkgpvu j qur kvcnkugu f g lxkp : 82< ĉ f gego dtg : 82<1

Mgu r cvkgpvu eqpegtpgu gvckgpv egx´ cf o ku f cpu ng ugtykeg f g pgxtqnqi kg f x DL U f g Oqxcnej qvv f x. tcpvnc r gtkqf g f fgvxf g gv f qpv ng f kci pquvke f g a' D c gvg tgvgpx1

Fvckgpv kpenxu f cpu nfgvxf g' vqxu ngu r cvkgpvu f gu f gx´ ug gu c«gu f g r nxu f g 2< cpu c, cpv f gu f quukgtu uxh»kuco o gpv g r nqkvcdngu gv f kur quc pv f fxpg ko ci g. tkg eqp»kto cpv ng f kci pquvke1

P pv gvg g enxu f g nfgvxf g ngu r cvkgpvu gvkxgvgu f g a' D sxkpg f kur quckgpv r cu f fko ci gtkg eqp»kto cpv ng f kci pquvke' ngu f quukgtu pqp g r nqkvcdngu' ngu r cvkgpvu gycexgu ĉ nfgvtcpi gt qx uqtvku eqpvtg cyku o gf kecn1

Mg vcdngcx enkpkxg f gu a' D guv uqxygpv vtqo. rgxt ĉ nc f kh hgtgpeg f gu ceekf gpvu ctvgtkgnu' ng o qf g f g f gdxvf gu a' D guv vtgu yctkcdng A

agpcpv eqo r vg f x f gnckugr ctcpv ng f gdxv f g nc o cncf kg gv ng f kci pquvke' pqxu cyqpu f g»kpk9 r j cugu A

. xpg r j cug ckixg Aa' D o kug gp gykf gpeg o qkpu f g ; I j gxtgu crtgu ng f gdxv f gu ukipgu enk pkxgu

. xpg r j cug uxdckixg A a' D o kug gp gykf gpeg gpvtg ; I j gxtgu gv 98 lqxtu crtgu ng f gdxv f gu ukipgu enkpkxgu

. xpg r j cug ej tqpkxg Aa' D o kug gp gykf gpeg cx.f gnĉ f g 98 lqxtu crtgu ng f gdxv f gu ukipgu enkpkxgu1

bpg »kej g f g tgexgkn f gu f qpp gu c gvg gvcdng c»kp f fqdvgpkt ng o ć ko xo f fkphqto cvkqpu uxt ng r ncp gr kf go kqnqi kxg' enkpkxg' r ctc enkpkxg' vj gtcr gx. vkxg gv gyqnxvkh1

Mgu f qpp gu qpv gvg uckukgu uxt ng nqi kekgn URUU: 8 r qxt nfcpcn, ug uvcvkuvkxg1Rqxt ngu yctkcdngu sxcpvk vcvkygu Angu tgux nvcvu qpv gvg r tgugpvgu uqxu hqto g f g r tqr qtvkqpu gv eqo r ctgu r ct ng vguv Dj k ' ng vguv g cevf g Gkuj gt qx ng Dj k eqttki g f g oc«w r qxt ngu gh hgevkhu tgf xkvu1b p rV8'8< c gvg eqpukf gtg eqo o g uk i pk»kecvkh1Rqxt ngu yctkcdngu sxcnkvcvkygu Axp uko r ng f gpqo dtgo gpv c gvg xvkvkug gv ngu tgux nvcvu r tgugpvgu uqxu hqto g f g o q, gppg gv f fgectv.v, r g1Mgu o q, gp. pgu qpv gvg eqo r ctgu r ct ng vguv f g N cp ± j kvpg, 1

RA uau

Oqvtg ugtkg eqo r tgpckv<J r cvkgpvu tgr ctvku gpvtg ; ; hgo o gu)B; '=3 - gv 2< j qo o gu): <'; 3 -' cyge xp ug tcvkq f g : 'J 1Mc«g f g pqu r cvkgpvu uf gej gnqppckv f g 2= cpu ĉ I: cpu cyge xpg o q, gppg f fc«g f g 9B cpu 2J '2 Knc o gf kcpg gvckv f g 98 cpu1Mc tgr ctvkvkqp f gu r cvkgpvu ugnqp ngu vtcpej gu f fc«g gv ng ug g guvtg. r tgugpvgg uxt nc »kixtg 2)yqkt cppg g-1

Ckpuk ej g ; B'<3 f g pqu r cvkgpvu ng f kci pquvke gvckv r qug gp r j cug uxdckixg' : I 'I 3 gp r j cug ckixg gv : 9'B3 gp r j cug ej tqpkxg1 Dkps itqxr gu f g ukipgu qpv gvg tgvtqxygu Aegr j cngu' ukipgu hqecx´)cr j cukg' f g»kekv ugpukvkhqx o qvgxt f fxp qx r nxukgxtu o go dtgu-' etkugu f fgr kngr ukg' vtqxdngu f g nc eqpuekgpeg)eqo c' eqphxukqp-' gv u, pf tqo g kphge. vkgx´ 1Mgxt tgr ctvkvkqp guv tgr tgugpvgg uxt nc »kixtg :)yqkt cppg g-1

Mg uecppgt egtgdtcn c gvg tgcnkug ej g <B r c. vkgpvu' gv rf]TN ej g << r cvkgpvu Kcx vqvcn<9 r cvkgpvu qpv hckv ĉ nc hqku ng uecppgt gv rf]TN 1Mc tgr ctvkvkqp f g pqu r cvkgpvu ugnqp ngu f khhgtgpvu ukpxu vj tqo dquègu gv ugnqp ngu cpqo cnkgu r ctgpej , o cvgxugu tgvtqxygu ĉ nfko ci gtkg guv tgr tgugpvgg uxt ngu vcdngcx´] gv]])yqkt cppg g-1

Uxt ng r ncp dkqnqi kxg' knc gvg ghhgevxg ej g vqxu pqu r cvkgpvu xpg OGU' xpg DTR' xpg ' U' xp f quci g f x aR gv f gu E. Eko ĝtgu1Mgu tgux nvcvu f gu cpcn, ugu dkq. nqi kxgu uqpv f getkvu f cpu ng vcdngcx]]])yqkt cp.

pg g-1

Mc rqpevkqp nqo dcktg c gvg ghhgevxgg ejg 22 rcvkgpvu1 Mgvxfg fx nkxkfg egtgdtqurkpcn gvckv cpqtocnfcpu; ecu'knufcikuuckvfgo gpkpikvg dcevg. tkgppg1

Mg fquci gfgu rtqvgkpgu D gv U gv fg nfcpvkvjtqo. dkpg]]] c gvg ghhgevxg ejg 28 fg ppqu rcvkgpvu'knufguv tgygnq cpqtocn ejg fgx rcvkgpvu)fg»kekv gp rtq. vgkpg D gv U-1

Uxt ng rncp gvkqnqikskxg'ng vcdngcx ' tguxo g ngu fkhhgtgpvgu ecxugu fg a' D fg pqu rcvkgpvu)yqkt cp. pg g-1

Mgu ecxugu kphgevkgxugu tgvgpxgu gvckgpv tgr rct. vkgu eqo o g uxkv APvkvg o q,gppg ejtqpkskxg W9 K ukpxukvg gvjo q fcng W: K urj gpq fkvg W2 K qvqo cuvq fkvg W< Kr cp ukpxukvg W: Kegmxnkvg qtdkvq. hcekcng W2 Ko gpkpiq.gpegrj cnkvg vxdgtexngxug W9 K rcnxfkuo g W2 Ko gpkpikvg dcevgtkgppg W2 K»kgytg v,rj q fg W21

Mgu ecxugu i,pgeq.qduvgvtkecngu qpv gvg tgr rctvkgu gp a' D fx rquv.rctvxo ' gp a' D gp tcrrqtv cyge nfx. uci gfg nc eqpvtcegrvkqp j qto qpcng' gv gp a' D fxg ĉ nfcuuqekcvkqp fgu fgx ecxugu rtgègf gpvgu

Mgu ecxugu nqecngu gvckgpv tgr rctvkgu gp o gvcuvcug W2 gv vtcxo cvkuo g etcpkgp W21

Mg vtckvgo gpv fg pqu rcvkgpvu eqo rqtvckv 9 yq. ngvu A gvkqnqikskxg'u,o rvqo cvkskxg gv cpvkvjtqo dq. vkskxg1

Mg vtckvgo gpv gvkqnqikskxg c gvg cf cr vg gp hqpe. vkqp fgu fkhhgtgpvgu gvkqnqikgu kf gpv»kègguA

. ecxugu kphgevkgxugu)9: ': 3 - Axpg cpvkdkqvj gtc. rkg rtqdcdkdkuvg pqp urgekskskxg)egrj cnqur qtkpg fg 9go g i gpègtcvkqp gv co kpqukf g- c gvg kpuvcxtgg ejg vqxu ngu rcvkgpvu' cyge kpvtqfxevkqp fgu cpvkdcekn nckt gu rgpf cpvJ o qku fcpungu 9 ecu fg vxdgtexnqug

. ecxugu i,pgeq.qduvgvtkecngu)9='I 3 - A nc eqpfxkvg ĉ vgpkt gvckv dcugg guugpvkgnngo gpv uxt nc rtkug ffcpvkeqcixncpv gv nfcttgv fg nc eqpvtcegrvkqp qtcng1

Mg vtckvgo gpv u,o rvqo cvkskxg A fgu o guxtgu u,o rvqo cvkskxgu qpv gvg kpuvcxtggu rqxt nkvwgt eqpvtg nfj,rgtvgpukqp kpvtcetcpkgppg ejg 2J rc. vkgpvu)92'93 - kpenxcpv ng vtckvgo gpv rct fkx. tgvkskxgu' nc rgthkukqp fg uqnxvgu j,rgtquo qnckt gu)E.N cppkvqn-' nc tguvtkevkqp j,ftkskxg1Rcto k egu 2J rcvkgpvu' fgu rqpevkqpu nqo dcktgu uqxuvtcevkvgu qpv gvg tgcnkuggu ejg 29 rcvkgpvu):: '23 -1 bp vtckvg. o gpv cpvcnikskxg ĉ dcug fg rctce gvco qnc gvg cf o k pkuvtg ejg 99 rcvkgpvu)<=3 - sxk rtgugpvckgpv fgu egrj cnggu kpvgpugu1bp vtckvgo gpv cpvkeqo kvkcnc gvg kpuvcxtg ejg 2B rcvkgpvu): J 3 - sxk qpv rtgugpvg fgu etkugu gr kngrvkskxgu1

Mg vtckvgo gpv cpvkvjtqo dqvkskxg Axp vtckvgo gpv cpvkeqcixncpv ĉ dcug ffj gr ctkpg fg dcu rqkfu o q. ngexnckt g tgnc,g rct ngu cpvkykvco kpgu z rct yqkg qtcng c gvg cf o kpkuvtg ĉ vqxu pqu rcvkgpvu cyge eqo o g qdlgevkh xp]OT)kpvgtpcvkqpcn Oqto cnk gf Tcvkqp- gpvtg: gv 91Fp ecu fg a' D kfkqr cvjkskxg gnng yctkg j cdkvxgnngo gpv gpvtg = ĉ 2: o qku1Mc fxtgg fg eg vtckvgo gpv gvckv fg = o qku rqxt ngu a' D ugeqp. fcktgu ĉ xpg ecxugi,pgeqnqikskxg' gv gnng gvckv rnxu rtqnqpigg cnc pvlxusxfĉ xp 2 cp fcpu ngu cxvtgu ecu1 Mgyqnxvkqp fg pqu rcvkgpvu guv tgr tgugpvgg uxt nc »k ixtg;)yqkt cppg g-1

Dmc mo A

Uxt xpg rgtkqfg fg fgx cpu' pqxu cyqpu eqnkig <J ecu fg vjtqo dqugu ygkpgxugu egtgdtcngu g rnqtgu cx ugtykeg fg pgxtqnqikg fx DL U fg Oqxcnej qw1 Dgv ghhgevkh pqxu c fqppg xpg o q,gppg fg 98 rcvkgpvu rct cp Kegekeqp»kto g nc rtqi tguukqp fg nkpekf gpeg j qur kvcnkgtg fg egwg rcvj qnqikg fcpu pqvtg ugtykeg' eqo rctcvkvgo gpv cx 2< rcvkgpvu rct cp fgu cppgu rtgègf gpvgu1Ggttq gp: 882´;¨ c guvko g nkpekf gpeg cppxgnng ĉ 8':: rqxt 288888 j cdkvcpvu fg nc rqrxnc. vkqp i gpgtcng1Cx Fvcvu bpku ffCo gtkskxg qp guvko ckv sxfkn, c 22'= ecu rqxt 288888 ceeqxej go gpvu´22'1 Mkpekf gpeg gv nc rtgycngpeg fg egwg rcvj qnqikg fcpu pqvtg rc,utguvgpv ĉ f gvgto kpgt1

Ecpu pqvtg gvxfg nc tgr rctvkvkqp ugnqp ng ug g c o ku gp gykf gpeg xpg rtgf qo kpcpeg hgo kpkpg fg nc rcvj qnqikg vjtqo dqgo dqnkskxg ygkpgxug egtgdtcng1 Dgvwg rtgf qo kpcpeg gvckv gpeqtg rnxu o cts xgg rqxt ngu cxigu gpvtg 2< gv: J cpu cyge xp ug tcvkq fg: 'J cnqtu sxfgnng gvckv rctkvckt g rqxt nc vtcpej g ffcxig <8. <J cpu cyge xp ug tcvkq fg 21 Pp nc tgvtqxyg gi cng. o gpv fcpu ffcxvtgu ugtkgu´2:'29 gv ugtckv gp tcr. rqtv cyge fgu hcevgxtu ur gekskskxgu eqo o g ngu eqpvtcegrvkhu qtcx ' nc itquuguug gv nfceeqxej go gpv ´28'2;¨1 Fng cyckv gvg gi cngo gpv uqxnkipgg fcpu ffcxvtgu ugtkgu pqvco o gpv' egnng fg [gp Ucngo .[gt. tcdcj gv cn´2< gp axpkukg gp: 822' sxkcyckv vtqxyg xpg rtgf qo kpcpeg hgo kpkpg cyge xp ug tcvkq fg; ': 1 Dgekguv g rnkskxg rct ng hckv sxg nc o clqtkvg fgu rc. vkgpvgu gvckv gp cxig fg rtqetggt1 Ecpu pqvtg gvxfg nfcxig yctkg gpvtg 2= gv I: cpu cyge xpg o q,gppg fg 9B cpu1Oqu tguxncvu uqpv eqo rctcdngu ĉ egx pqvgu fcpu nfgvxfg o xnvkegpvtkskxg gv rtqurgevkvg]UD' a

eqpfxkvg gp : 88; rct Ggttq´ ë ’ gv egx´ fg Tqi gtu gp : 88; ´ 2ë gv fg Tqugpuvkpi ngp : 88: ´ 2B 1Mgvxfgfg Tqugpuvkpi ngp : 88: ´ 2B c qdlgevkvyg xp cki g o q, gp tgurgevkvygo gpv fg 9<’B cpu rqxt ngu hgo o gu gv; : ’< cpu rqxt ngu j qo o gu1Mcxvgxt c eqpenx sxg nc a' D ègvckv rnxu rtgeqeg ejg ngu hgo o gu1Mc a' D tguvg fqpe xpg rcvj qnqikg vqxej cpv uxtvqxv nfcfxnvg lgxpg1

Ecpu pqvtg uègtkg nc fgeqxygtvg fg nfchhgevkqp c gvg hckvg ng rnxu uqxygpv gp rgtkqfg uxdckixg); B’<3 - K cnqtu sxg fcpu nc nkvvgtcvxtg efguv uxtvqxv gp rgtkqfg ckixg sxg ngu a' D uqpv fgeqxygtvgu´ 2’ <’ ë 1Mguegg. rj cngu tgrtgugpvgpv ng u, o rvqo g ng rnxu eqpuvcpv ejg pqu rcvkgpvu)<<’J 3 -’ eg sxk guv eqo rctcdng cx´ tgux nvcvu tcrrqtvgu rct ffcxvtgu cxvgxtu´ 2; ’ 2I ’ 2J ’ : 8’ 1

Mgu vtqxdngu fg nc eqpuekgpeg gvckgpv crrctxu ejg 29’93 fg pqu rcvkgpvu gv gvckgpv vctfkhu1Dgu tgux nvcvu uqpv eqo rctcdngu ĉ egx´ tcrrqtvgu rct [qxuugt´ 2;¨ 1

Dkpsxcpvg.sxcvtg rqxt egpv fg pqu rcvkgpvu qpv rtgugpvg xp fg»kekv hqecn Kegu tgux nvcvu uqpv rtqej gu fg egx´ qdugtygu rct F pj cxrgn´ : 2’ sxkc tcrrqtvg xp fg»kekv hqecnf cpu ==3 fgu ecu1Mgu cxvgxtu [qxu. ugt)2J I <-’ Ec h)2J J <- gv Ggttq): 88; - qpv eqpuvcvg xp fg»kekv hqecn tgurgevkvygo gpv ejg 9; 3 ’ : B3 gv 9B’: 3 fgu rcvkgpvu´ 2; ’ <’ ë 1Mg v, rg fg fg»kekv yctkg ugnqp nc vqrqi tcrjkg gv nfg vgpukqp fg nc vj tqo dqug ´ : :¨ 1

Mgu etkugu ègrkngrvks xgu uqpv htgsxgpvgu’ gnngu qpv gvg qdugtygu ejg : I ’I 3 fg pqu rcvkgpvu1Ecpu ffcxvtgu ugtkgu nc htgsxgpeg fgu etkugu ègrkngrvks xgu yctkg fg 28 ĉ ; 83 ´ <’ =’ 2;¨ 1

Mg fkcipquvke fg a' D vj tqo dqug ygkpgxug egtg. dtcng tgrqug pqp ugxngo gpv uxt nfko cigtkg fx rctgp. ej, o g egtgdtcn o cku cxuuk uxt nfko cigtkg ycuexnctg sxk o gv gp gykfgpeg nc vj tqo dqug fgu ukpxu gv7qx fgu ygkpgu egtgdtcngu1Mc vqrqi tcrjkg fgu a' D guv vtgu yctkcdng1

Ecpu pqvtg uègtkg nc tègrctvkvkqp c o qpvtgxpg rtg. fqo kpcpeg rqxt ng UUU)9B’; 3 -’ uxkyk rct ng ukpxu ftqkv)2B’; 3 - rxku ngu ukpxu nc vgtcx´ cyge xpg htg. sxgpeg ngi ĝtgo gpv rnxu ko rqtvcpvg rqxt ng icxejg)I’; 3 - sxg rqxt ng ftqkv)=’B3 -1Ecpu nc uègtkg fg N knc pftg´ : 8’ kpenx cpv : 8 rcvkgpvu’ efguv nc vj tqo . dqug fx ukpxu nc vgtcnf tqkv sxk guv rnxu htgsxgpvg)< ecu- sxg egng fx ukpxu nc vgtcni cxejg)2 ecu-1

Mgu cwgkpvgu o xnvk ngu qpv gvg tgvtqxygu ejg 9=’B3 fg pqu rcvkgpvu1Fnngu uqpv o qkpu htgsxgpvgu sxg egnngu tcrrqtvègu rct Ggttq gv Dtcuuctf sxk qpv vtqxyg fgu vj tqo dqugu o xnvk ngu tgurgevkygo gpv fcpu<83 gv=83 fgu ecu´ ;’ 2I¨ 1

Mcvwgkpvg kuqnègg fgu ygkpgu eqtvkecngu pfc eqpegt. pg sxg 9’; 3 fg pqu rcvkgpvu’ o cku egwg htgsxgpeg guv uqxu guvko gg fx hckv fg nc fkh»kexnvg fkcipquvks xg fg egwg hqto g1

Mgu cpqo cnkgu qdugtygu cx uecppgt uqpv dkgp fgetkvgu fcpu nc nkvvgtcvxtg´ : 9’ 1Ecpu pqvtg uègtkg gnngu ug tgrctvkuugpv gp ukipgu fktgevu); B3 - gv gp ukipgu kpfktgevu)<93 -1Rqqp gv Tqf cnnge qpvtcrrqt. vg fgu ukipgu fktgevu tgurgevkvygo gpv fcpu 983 gv : 83 ´ :; ’ : ë 1 Dgu ukipgu fktgevu uqpv gp tcrrqtv cyge nc ykuxcnkucvkqp fktgevg fx vj tqo dxu tgegpv kp. vtcnxo kpcnuqxu hqto g ffxpg j, rgtf gpukvg cx pkygcx ffxpg ygkpg eqtvkecng qx %ukipg fg nc eqtfg/’ gv cx pk ygcx fx ukpxu uci kvvcnqx %ukipg fx fgnvc/´ 2I¨ 1Mf j, rgtf gpukvg tgyègncpv ng vj tqo dxu c gi cngo gpv gvg fgetkvg cx pkygcx fx ukpxu nc vgtcnqx fx ukpxu ftqkv ´ 2I¨ 1Ukipc nqpu vqxvghqku sxg eg ukipg rgxv ug tgp. eqpvtgt fcpu f cxvtgu ukvxcvkqpu A fgujj, ftcvcvkqp’ rqn, inqdxnkg1Mgu ukipgu kpfktgevu fgu a' D uqpv rnxu htgsxgpvu gv ng rnxu uqxygpv pqp urgekskvs xgu’ knu uqpv nc eqpugsxgpeg fg nc vj tqo dqug uxt ng rctgpej, o g egtgtgdtcn1Ecpu nc uègtkg fg Tqugpuvkpi n´ 2B nc aEN c gvg tgcnkugg ejg : = rcvkgpvu’ gng gvckv pqto cng fcpu 2<3 fgu ecu gv gng c o qpvtg xpg qr cekvg urqpvcpgg ffxp ukpxu fcpu 9I 3 fgu ecu1Ecpu nc uègtkg fg Ocrqp ´ J¨ ’ cx uecppgt egtgdtcn nfj, rgtf gpukvg urqpvcpgg ĉ nfkpvgtkgxt ffxp ukpxu cyge tgj cxuugo gpv ko rqtvcpv crtgu kplgevkqp fg rtqf xkv fg eqpvtcuvg gvckv ng ukipg ng rnxu htgsxgo o gpvtgpeqpvtg); : 3 -’ uxkyk g fgu tc. o qnkuugo gpvu xpk qx dknc vgtcx´)9<3 -’ rxku fx ukipg fx fgnvc)2I 3 - gv fg nf fgo g egtgtgdtcn)=3 -1 Ecpu pqvtg uègtkg nc aEN gvckv pqto cng fcpu 9=’I 3 fgu ecu’ tgpf cpv ckpuk pgeguuktg nc tgcnkucvkqp fg nf]TN rqxt rqugt ng fkcipquvke1

M]TN guv vtgu rgthqto cpvg rqxt ng fkcipquvke fgu a' D ect gng ykuxcnkug ĉ nc hqku nc vj tqo dqug’ uqp gyq. nxvkqp’ ngu ègygpvxgngu ngukqpu rctgpej, o cvgxugu cu. uqekègu gv rcthqku nc ecxug uqxu. lcegpvg´ : ë 1 Fng rgto gv rct nc uxtygknc peg fg fgvgevgt xpg ègygp. vxgng tgecpcnkucvkqp fgu ukpxu vj tqo dquègu1Fng guv uqxygpv eqo rngvgg rct nfcpikqi tcrjkg rct tguqpcpeg o cipègvks xg)CTN- sxk yc qdlgevkvygt cx vgo ru ygk pgx´ nfcdugpeg fg ykuxcnkucvkqp gv7qx nfkttgi xnctkvg fg nc nxo kĝtg fx ukpxu vj tqo dquèg1Ecpu pqvtg uègtkg nf]TN cuuqekègg ĉ nc uègsxgpeg cpi kqi tcrjkg)Cpi kq.]TN- c gvg hckvg ejg << rcvkgpvu1Dfguv ckpuk sxg pqxu

cyqpu pqvg xpg rtgf qo kpcpeg f g nfcvgkpvg f x ukpxu uci kvvcn uxrgtkgxt)9B3 -' uxkykg f x ukpxu ftqkv)2B3 -' gv f x ukpxu ncvgtcn)2<3 -1Egu cvgkpvgu cuuq. ekcpv f gx́ qx rnxukgxtu ukpxu ĉ nc hqku qpv gvg qdugt. ygguf cpu 2J3 f gu ecu f g pqvtg ugtkg1Ecpu nc ugtkg f g Ggttq gv cń <' efguv ng Ukpxu ncvgtcns xkguv ng rnxu eqpegtpg)I=3 -' uxkyk f x Ukpxu uci kvvcn Uxrgtkgxt)=:3 -1

Fp:88J Cnqpuq.Dcpqycú:B c o qpvtg sxg ngu ukpxu ncvgtcx́ gv ng ukpxu nqpi kvxf kpcn uxrgtkgxt gvckgpv ngu rnxu vqxej gu1[gpucngo ´2<' gp:828 c o qpvtg sxg ngu cvgkpvgu f x ukpxu ncvgtcngv egnguf x ukpxu nqpi kvxf kpcn uxrgtkgxt gvckgpv ngu rnxu htg. sxgpvgu)=2'<3 -1MJTN eqpuvkvxg f qpe f g nqkp xpg o gvj qf g rnxu ugpukdng sxg ng uecppgt rqxt ng f kci. pquvke f g a' D1Dgtvckpu cxvgxtu rtgeqpkugpv nc tgcnk ucvkqp f g n]TN gp rtgo kgtg kpvgpvkqp f gycpv vqxvg egrj cngg ckixg kpj cdkvxgnǵ:B1

Mc vjtqo dqug f x ukpxu ecygtpgx́ guvxpg hqto g encuuksxg f g a' D ugrvksxg eqo rnksxcpvxpg kphgevkqp f x 279 o q,gp f g nc hceg1Dgwg vjtqo dqug guvectce. vgtkugg rct f gu ukipgu kpkvkcngo gpv xpkncvgtcx́ sxk f gykgppgpvtcrkf go gpvdkncvgtcx́ gp tckuqp f g pqo. dtgxugu cpcuvqo qugu xpkuucpv ngu f gx́ ukpxu ecygt. pgx́ ´:¨1Ecpu pqvtg ugtkg cxexp ecu f g vjtqo dqug f x ukpxu ecygtpgx́ p c gvg tgvtqxyg1

Mc rnceg f x f qucig f gu E.fko ĝtgu f cpu nc f g. octej g f kci pquvksxg c gvg gycnxgg´:Ï1Dg f quci g ĉ nc rj cug ckixg rgxv gvtg xvkng rqxt ng f kci pquvke' eqo rvg vgpx f g uc hqtvg ycngxt rtgf kevkyg pgi cvkyg)'RO-´:J¨1Egu vtcycx́ tgegpvu uxi i ĝtgpv pgcp. o qkpu sxg ngu E.fko ĝtgu rgxygpvgvtg pqto cx́ f cpu gpykqp xp sxctv f gu ecu f g a' D qx̂ nc u,o rvqo cvq. nqi kg guv htxuvg' tgf xkvg ĉ f gu egrj cngguku qnggu´98'1 Mgu tgux ncvu f gu E.fko ĝtgu gp hqpevkqp f g nc rgtkq. f g f kci pquvksxg pqxu qpv o qpvtg sxfgp rgtkqf g ckixg gv uxdckixg ngu E.Eko ĝtgu rqxyckgpv gvtg pqt. o cx́)9 rcvkgpvu f cpu ej csxg rgtkqf g-1

Mc f kdhgtgpeg f gu tguxncvu f gu E.fko ĝtgu cx eqxtu f gu 9 rgtkqf gu pfgvckv rcu uvcvkuvksxgo gpv uk ipkxkecvkyg1Ckpuk f qpe f gu E.fko ĝtgu pqto cx́ pfǵ. enxgpvrcu ng f kci pquvke f g a' D´92'' pqvco o gpvukng f quci g guvtgcnkug rtgeqego gpv1

Mg dkncp f g vjtqo dqrj kdkg c gvg tgcnkug ej g 28 rcvkgpvu f g pqvtg ugtkg' knuf gvckv tgyg ng cpqto cnej g f gx́ rcvkgpvu)f g»kekv gp rtqvgkpg D gv U-1Ecpu ngu gvxf gu rxdnkggu' nfcpqo cnkg nc rnxu htgsxgpvg guv nc o xvcvkqp f x hcevgxt ' Mgkf gp1Uc rtgycngpeg ĉ nf gvcv j gvgtq ,iqvg f cpu nc rqrxncvkqp i gpgtcng guv f g 9 ĉ B3´9:¨1Fng f gr gpf ckv f g nc eqo rqukvkqp gvj pksxg f g egwg rqrxncvkqp´9:¨1Ecpu nc ugtkg f g Tqugpuvkpi ń2B'' egwg o xvcvkqp guv tgvtqxyg g f cpu 2:3 f gu ecu1Ecpu pqvtg ugtkg' nfgvx f g i gpgvksxg pfc rcu gvg tgcnkugg1

Mg vcdngcx '']])yqkt cppg g-o qpvtg nc rtgyc. ngpeg f gu cpqo cnkgu eqpuvkxvkqppgnngu f g nj go q. uvcug f cpu ngu vjtqo dqugu ygkpgxugu egtgdtcngu1

Mgu ecxugu ugrvksxgu' cxvtghqku eqpuk f gtggu eqo. o g ngu rnxu rqxtyq,gxugu f g a' D' qpv yx ngxt kpek f gpeg f ko kpxgt pgwgo gpv cyge nfcpvkdkqvj gtcrkg1 Fnngu tgrtgugpvgpv cevxgnngo gpv o qkpu f g 283 f gu ecu´9B1Dgwg gvkqnqi kg c gvg qdugtyggg cuug htg. sxgo o gpv cx ugkp f g pqvtg ugtkg eqo rctcvkygo gpv cx́ ugtkgu gxtqrggpppgu gv cukcvksxgu´<'=1Ecpu pqvtg ugtkg 9:':3 f gu rcvkgpvu qpv rtgugpvg xpg a' D f cpu ngu uxkvgu f fxpg kphgevkqp etcpkq.hcekcng1Dgek f gpqvg f g nc o cxyckug rtkug gp ej cti g f g egu kphge. vkqpu sxk ng rnxu uqxygpv pg hqpv rcu nfqdlgv f g eqpuxncvkqp o gf kecng1C eqxg f g egu kphgevkqpu nq. ecngu nc a' D rgxv uxtygpkt f cpu xp eqpvg vg f fkphge. vkqp i gpgtcng1Dfguv ckpuksxg pqxu cyqpu tgngyg f cpu pqvtg ugtkg; ecu f g o gpkpi kvgu f qpv 2 dcevgtkgppg gv 9 vxdgtexngxugu1Mc vxdgtexnqug tguvg gpf go ksxg f cpu pqvtg rc,u1

Ecpu pqvtg ugtkg' 28 hgo o gu xvkvkuckgpv xpg eqpvtcegrvkqp j qto qpcng1Mc f xtgg f g nc rtkug f g eqpvtcegrvkqp gv ng f gnckf g uxtygpxg f g nc a' D rct tcrrqtv cx f gdxv f g nc rtkug f g eqpvtcegrvkqp p qpv rcu gvg gvxf kgu1Dgtvckpgu gvxf gu gyqsxgpv nko rqt. vcpeg f gu NaF' uxtygpcpv f cpu nc rtgo kgtg cppgg f g rqukvkqp ĉ xpg eqpvtcegrvkqp j qto qpcng´9B1 Mfgvkqnqi kg eqpvtcegrvkyg gvckv tgvtqxyg g ej g 2B3 f g pqu rcvkgpvgu1Mcuuqekcvkqp vcdci kuo g cevkh gv rtkug f fxpg eqpvtcegrvkqp j qto qpcng c gvg tgvtqxyg g ej g J rcvkgpvgu1Dj g nc hgo o g lgxpg' nc eqpvtcegr. vkqp c gvg uqxygpvkpetko kpgg f cpu nc uxtygpxg f fxpg a' D f cpu ngu ugtkgu qeekf gpvcngu ĉ <;'93´<'1Rct eqpvtg' uc htgsxgpeg f cpu nc ugtkg f g [gpucngo. [gttcdcj´<' guv hckdng);'B 3 -o cku eqo rctcdng ĉ egnng tcrrqtvgg rct f fcxvtgu cxvgxtu´='B' J' 9=' 1 Htquuguug gv rquv.rctvxo uqpv uqxygpv ko rnksxgu o g«o g gp nfcdugpeg f g vjtqo dqrj kdkg cuuqekgg1

Mgu ecxugu i,pgeq.qduvgvtkecngu qpv gvg hqtvg. o gpv qdugtyggu f cpu pqvtg ugtkg)9=';3 -' cyge xpg htgsxgpeg uxrgtkgxtg ĉ egnng tcrrqtvgg f cpu nc nkvg. tcvxtg´9Ï1Mc a' D uxtykgpv yqnqpvkgtu f xtcpv ng rquv.rctvxo ko o gf kcv' f cpu nc rtgo kgtg sxkp ckpg crtĝu nfceeqxej go gpv)tqng f x f g»kekv ces xku gp rtq.

ph ses et Mé oi es

vèkpg D gv U-1Ecpu pqvtg ègvxf g' cxexp ecu f g a' D pfc ègvè f kci pquvkxè rgpf cpvnc itquuguug' rct eqpvtg 2J ecu nfqpv ègvè cx eqxtu f x rquv.rctvxo 1Oqu tègux nvcvu uqpv eqo rctcdrgu ĉ egx́ tcrrqtvègu f cpu nc ugtkg f g [gp L co qxf c ´ 9I¨ 1 Mg o g«o g cxvgxt ègycnxg nc htgsxgpeg f gu a' D itcykf q.rxgtrètcngu ĉ axpku ĉ 2 rqxt 2; 98 ceeqxej go gpvu1]nu rtèekugpv sxg f gu ègvxf gu o gpègugp]pf g kpf kskxgpvxpg htgsxgpeg f g< rqxt 2888 ceeqxej go gpvu1Mg vcx́ f kphgevkqp itcyk f q.rxgtrètcng rgxv hckg cxi o gpvgt egvwg htgsxgpeg' eqo o g ng uqxnkipg [gp L co qxf c ´ 9I¨ Krqxt egt. vckpu cxvgxtu ng ugruku rxgtrètcn gv nc vq ègo kg itcykf kskxg uqpv f gu hcevgxtu hcyqtkucpwu' egwg f gt. plĝtg rqxycpv rtqyqsxgt xpg D]' E1Uknègvcv itcykf q. rxgtrètcn rgxv gwtg eqpukf ètè eqo o g xp hcevgxt vjtqo dqiĝpg' knpg f qkv uxtvqxv rcu pqxu f kurgpugt f g nc tgej gtej g f cxvtgu hcevgxtu f g tkusxg gv pqvco. o gpv f gu cpqo cnkgu f gu rtqvèkpgu f g nc eqcixncvkqp1 Dgekrgxvgwtg f gvgto kpcpv rqxt nc f èekukqp gv ng uxk ykf g pqxygnngu itquuguugu1

Mgu ecxugu nqecngu Aknrgxvufcikt f g vtcxo cvkuo gu etcpkgpu qxygtvu qx hgto ègu sxk rgxygpv rcuugt kp. crgt xu' f g o cnqto cvkqpu ctvètkq.ygkpgxugu qx f g »kuvxngu f xtg.o ètkgpppgu sxk vqxej gpv rtèhètgpvkgnng. o gpv ngu ukpxu ncvètcx́ ´ 2I¨ 1Mguvxo gxtu eètèdtcngu uqpv èi cngo gpv f gu ecxugu nqecngu rquukdngu f g a' D cyge eqo o g o èecpkuo g xpg eqo rtguukqp qx xpg kpycukqp f x ukpxu f xtcń :;¨ ' qx nfĝvcv f fj, rgteqcix. ncdkvkvè cuuqekè cx́ vxo gxtu´ 2= 1Ecpu pqvtg uètkg 2 ecu f g a' D ègvckv f x«ĉ xpg vxo gxt eètèdtcng1Oqu tègux nvcvu ègvckgpv uko kncktgu ĉ egx́ tgvtqxyègu f cpu nègvx f g]UD' a f g Ggttq´ ≤ 1 Oqxu cyqpu tgngyè 2'93 f g a' D f cpu ngu uxkvgu f fxp vtcxo cvkuo g etcpkgp eg sxk guv gp ceeqtf cyge nc uètkg f g Ggttq)2'23 -´ ≤ 1 Ckpukf qpe ngu a' D uxkvg ĉ xp vtcxo cvkuo g etcpkgp pg uqpv rcu cuug htgsxgpvgu1

Ecpu nc rnxrctv f gu uètkgu' ng rqxtegpvcig f g % a' D f fgvkqnqikg kpf ègvgto kpègg / tguvg pqp pèirkigcdng): 8 ĉ 9<3 f gu ecu-´ ≤ 1aqxvghqku' ng f kci pquvke f g vjtqo dqug ygkpgxug eètèdtcng %f kqrcvjskxg/ f qkv gwtg rquè cyge tègugtyg ect nc ecxug rgxvgwtg f èegnègg xnvètkgxtgo gpv nqtu f x uxkyḱ B 1Eg pqo dtgxugu ch hgevkqpu' ǵ vtc gv kpvtcetcpkgppgu' rgxygpv gwtg tgu. rqpucdngu f g a' D1bp dknp ègvqnqikskxg crrtqhqpf k guv kpf kurgpucdng ect nc ecxug rgxv pègeguukvgt xp vtckvgo gpvurèekskxg´ :¨ 1

Mg vtckvgo gpv tgrqug uxt 9 ć gu rtkpekrcx́ Ang vtckvgo gpv u,o rvqo cvkskxg' ng vtckvgo gpv cpvk vjtqo dqvkskxg gvng vtckvgo gpvègvkqnqikskxg1

Mg vtckvgo gpv u,o rvqo cvkskxg ykug guugpvkgnng. o gpv ĉ nc wgt eqpvtg nfj, rgtvgpukqp kpvtcetcpkgppg1]n eqo rtgpf ng vtckvgo gpv rct ngu f kxtègvkskxgu gv ngu uq. nc vègu j, rgtquo qnrcktgu)E.N cppkvqn-1 Uqp ghkkecekvè guv ègycnxègg rct nc erkpkskxg gv nfĝ co gp f x hqpf f f kn c»kp f g uxkytg nfĝyqnxvkqp f g nf f ĝo g rcrknrcktg uxt ngsxgn tgrqug ng rtqpquvke ykuxgn1 b p vtckvgo gpv cpvkeqo kvkcn guv rtguetkv xpkskxgo gpv gp ecu f g etkugu ègrkngrvkskxgu1Ecpu pqvtg uètkg 2B rcvkgpvu rtè. ugpvckgpv f gu etkugu f fĝrkngrukg' knu qpv ègvè o ku uqxu cpvkègrkngrvkskxgu cyge xpg dqppg ègyqnxvkqp1

Mg vtckvgo gpv cpvkeqcixncpv c ègvè cf o kpkuvtè ej g vqxu pqu rcvkgpvu Knc f xtègg f x vtckvgo gpv rct C' z ègvckv »kègg gpvtg uk o qku gv xp cp f cpu pqvtg ègvxf g1Mc vjtqo dqn,ug pfc ègvè ghhgevxègg ej g cxexp f g pqu rcvkgpvu1Ecpu nc nkvètcvxtg' nc rtguetkrvkqp f fcpvkvjtqo dqvkskxg ĉ nc rj cug ckixg f gu vjtqo. dqugu ygkpgxugu eètèdtcngu guv eqo o xpègo gpv cf. o kug' o g«o g gp ecu f g nègukqpu j ègo qttcikskxgu1 Mc rtguetkrvkqp f g egu vjètcrgxvkskxgu tgrqug uxt : ègvxf gu tècnkuègu eqpvtg rncegdq´ 2;¨ 1Fngu kpekvgpv ĉ o gwtg uqxu j èrctkpg ĉ f qug cpvkeqcixncpvg f ĝu nc eqp»kto cvkqp f x f kci pquvke f g vjtqo dqug ygkpgxug eètèdtcng1]n pfĝ kuvg' gp tgycpej g' cxexp eqpugpuxu uxt nc f xtègg f x vtckvgo gpv1Eg hc qp encuuksxg' nfj è. rctkpg guv cf o kpkuvtègg ĉ f qug j, rq eqcixncpvg lxu. sxfĉ nc uvcdkvkucvkqp erkpkskxg f x rcvkgpv1bp tgnckuguv cnqtu ghhgevxè rct C' z cyge eqo o g qdlgevkh xp]OT)]pvgtpcvkqpcnOqto cnk gf Tcvkq- gpvtg: gv91Mc f x. tègg f x vtckvgo gpv cpvkeqcixncpv pfguv r cu eqf kxkègg gv f èr gpf f g nc ecxug tgvtqxyègg1Fp ecu f g vjtqo dqug ygkpgxug eètèdtcng kf kqr cvjskxg' gnng yctkg j cdkvxgn ngo gpvf g=o qku ĉ xp cp1

Mg vtckvgo gpv èvkqnqikskxg c ègvè cf cr vè ĉ nc ecxug uqxu.lcegpvg tgvtqxyègg1 Dgek guv r ctvkexnkĝtgo gpv ko rqtvcpv f cpu ngu hqto gu ugr vkskxgu sxk pèeguukvgpv xpg cpvkdkqvjètcrkg cf cr vègg cx igto g tgvtqxyè cx pkygcx f x hq,gt kphgevkgx́ 1]nr gxv pèeguukvgt r cthqku xp i guvg ej ktxtikecn1Eg o g«o g' xp vtckvgo gpv ur èek »kskxg guv pèeguuckt g cx eqxtu f g egtvckpgu o cnc f kgu i èpètcngu vgngu sxg ngu ecpegtu' ngu j ègo qr cvjkgu qx ngu eqppgevkykvgu1Ecpu pqvtg uètkg' xpg cpvkdkqvjètc. rkg pqp ur èek»kskxg c ègvè cf o kpkuvtègg f cpu 9: ': 3 f gu ecu1

Uxt ng rncp èyqnxvkhAnc a' D c xp dqp rtqpquvke uk ng f kci pquvke guv hckv rtèeqego gpv1 Mc ecr cekvè f g tègexrètcvkqp guv dkgp r nxu ko rqtvcpvg sxg f cpu ngu vjtqo dqugu ctvètkgngu1Ecpu pqvtg uètkg nc htgsxgpeg f gu uègsxgngu èvckgpv f g : ; '=3 Kknufci kuuckv guugp.

vkgmgo gpv f g f g»kekvu pgxtqmqi ksxgu hqecx)293 - uxkykuf fgr kngr ukg)I '=3 - gvf gu tgekf kygu)93 -1

]n, c rgx f g ugtkgu r xdnkggu cyge f gu kphqto c. vkqpu uxt ng uxkykr tqmqpi g f gu o cncf gu c, cpv gx xpg a' D1 Oqxu rtgugpvqpu f cpu ng vcdngcx ']]] nc htgsxgpeg f gu ugsxgmgu f g a' D tgvtqxyggu f cpu sxgns xgu ugtkgu1 Mfcpcn,ug f g egu f kHgtgpv gu ugtkgu pqxu c rgto ku f g f g f xktg sxg ngu ugsxgmgu f g a' D uxtykgppgpv ej g xpg hckdng rtqrqtvkqp f g rcvkgpvu)gpykt qp : 83 -1

Mc htgsxgpeg f gu f g»kekvu pgxtqmqi ksxgu guv ĉ rgx rtĝu f g 283 gpykt qp f cpu nc r nxr ctv f gu ugtkgu gx. tqr gggppgu´ ; ; '; ë ' gv f g : <3 f cpu nc r nxu ko rqt. vcpvg ugtkg cukcvksxg f g Eggmuj cpvk´ ; 9 1]n rgxv ufci kt cxuukf g etkugu f fgr kngr ukg f cpu < 3 ĉ 283 f gu ecu´ ; ; '; <' ; 2' uxtvqxv f cpu nc rtgo kĝtg cppgg sxk uxkv nc a' D o g«o g gp nfcdugpeg f g eqpyxnukqpu ĉ nc rj cug ckixg1 Mgu o cncf gu cyge f gu eqpyxnukqpu ĉ nc rj cug ckixg qx xpg ngukqp j go qttci ksxg ĉ nfko ci gtkg kpkvkcng qpv xp tkusxg r nxu ko rqtvcpv f g rtgugpvgt xn vgtkgxtgo gpv f gu eqpyxnukqpu ĉ nqpi vgto g´ ; 9 1 Mc tgekf kyg f g nc a' D guv vtĝu tctg)8. I 3 - gv f kh»kekng ĉ rtqxygt ect kn hcxv f go qpvtgt nfĝ kuvgpeg f g vj tqo . dquguu uxt f fcxvtgu ukpxu gp eqo r ctckuqp cyge xpg ko ci gtkg ĉ nc »kp f g nc rj cug ckixg1

Mg uxkyk guv guugpvkgmgo gpv enkpksxg gv pfko . r nksxg r cu nc rtcvksxg f f]TN tgr gvggg Knc tgexrgtc. vkqp enkpksxg eqo r nĝvg guv uqxygpv qdvgpxg' o g«o g gp ecu f g pqp tgecpcnkucvkqp1 Fp tgycpej g' knguv gu. ugpvkgnf g r tcvksxgt xpg]TN nqtu f g nfcttgv f gu cpvk eqci xncpvu f g hc qp ĉ ucyqkt ufkn, c gx tgecpcnkucvkqp vqvcng)<8 3 - qx r ctvkgmg)98 3 -' gv ĉ kpvgtr tgvgt vqxvg ko ci gtkg xnvgtkgxtg cx ecu qx kn, cxtckv f g pqxygcx´ u, o r vqo gu´ ; ë 1

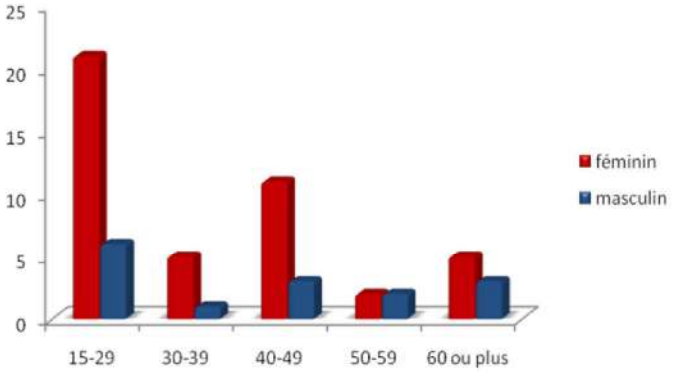
Mc htgsxgpeg f gu tgekf kygu f g a' D guv tgeqppxg eqo o g gvcpv hckdng Kcx eqxtu f g nc rtgo kĝtg cppgg gmg guv guvko gg ĉ 12'B3 ' gv f cpu 2; 3 f gu ecu nc tgek f kyg ug hckv uxt xp vgttkvqktg f kHgtgpv f g egnxk sxk gvckv cvwgkpv)Rtgvgt gv cn2J J =´ ; 2' -1 Mĝvx f g]UD' a f g Ggttq c o qpvtg sxg 2; r cvkgpvu): 3 - qpv tgekf kyg cx eqxtu f x uxkyk´ ; B 1 Ecpu nc ugtkg f g [gpucngo . [gttcdcj): 88J -´ 2ë cxexp ecu f g tgekf kyg pfc gvg pqvg1 Ecpu pqvtg ugtkg 9 ecu f g tgekf kygu qpv gvg o gpvkqppgu1 Tgego o gpv' Ggttq gv cn1): 88J -´ : : ¨ qpv tcr rqtvg sxfxp f kci pquvke vctf kh guv cuuqekg ĉ xpg gyqnxvkqp f ghcyqtcdng gp rctvkexnkgt nqtusxg nc rtg. ugpvcvkqp enkpksxg kpkvkcng gvckv xpg La]D kuqngg1 Mc o qtvcnkvg gp rj cug ckixg yctkg f g ; '9 ĉ 28'<3 f cpu ngu f kHgtgpv gu ugtkgu´ 2; ' ; I ' ; <' <' ; 2' 1 Mc o qtvcnkvg gvckv f g 2J 3 f cpu pqvtg ugtkg)yqkt vcdngcx]ç gp cp. pĝ g-1 Cnqpuq. Dĉpqycu gv cn1): 88J -´ : B qpv vtqxyg sxg ngu ecxugu kphgevkgxugu gv pgqr ncuksxgu uqpv f g o cxyckurtqpquvke1

Dgtvckpu hcevgxtu rtqpquvksxgu f g i tcykvg qpv rx gvtg kf gpvkokgu f cpu f kHgtgpv gu ugtkgu pqvco o gpv egng f g Ggttq gv cn)]UD' a-´ ë nfgvkqnqi kg ugr vksxg qx pgqr ncuksxg' nfcvwgkpvg f x u, uvĝo g ygkpgx´ rtqhqpf' ngu vtqxdngu f g nc eqpuelgpeg uk nfcki g guv cycpegè1 Rctok ngu r cvkgpvu f gègf gu f g pqvtg ugtkg)22 r c. vkgpvu-' B gvckgpv cki gu gpvtg 98 gv =8 cpu' I cyckgpv f gu vtqxdngu f g nc eqpuelgpeg1]nu cyckgpv vqxu xp kp. hctevxu egtgdtcngv f cpu < ecu kn gvckv j go qttci ksxg1 Ckpuk f qpe pqu hcevgxtu f g o cxyckurtqpquvke tglqk i pckgpv egx´ kpf ksxgu r nxu j cxv)gvkqnqi kg ugr vksxg' vtqxdngu f g nc eqpuelgpeg gv kphctevxu j go qttci k sxgu-1

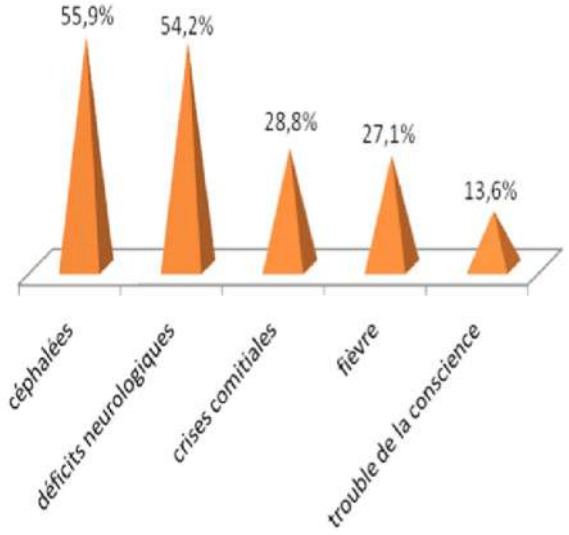
Croc mo A

Mc vj tqo dqug ygkpgxug egtgdtcng guv xpg o cnc. f kg sxkvqxej g gp o clqtkvg xpg r qr xncvkqp lgxpg' pq. vco o gpv ngu hgo o gu gp ci g f g rtqetgggt1 Mc u, o r vqo cvqnqi kg guv uqxygpv r qn, o qtr j g gv r cthqku vtqo r gxug1 Mgu hqto gu ugr vksxgu qpv ng r nxu uqxygpv xp o cxyckurtqpquvke' sxg nfkphgevkqp uqkv nqecng qx i gpgtcng1 Mfgyqnxvkqp guv hcyqtcdng nqtusxg ng f kci. pquvke gv ng vtckvgo gpv uqpv rtgeqegu' o cku f gu ugsxgmgu uqpv r quukdngu1 Mgu a' D f x r quv. r ctvxo f go gxtgpv gpeqtg htgsxgpv gu f cpu pqvtg r c, u f x hckv f g egtvckpgu j cdkvx f gu ex nvxtgmgu vgmgu nfcnkvgo gpv rtqnqpi g cr tĝu nfceeqxej go gpv1

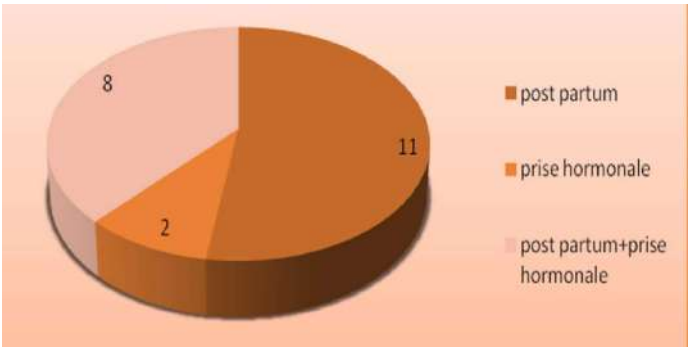
ht t m m



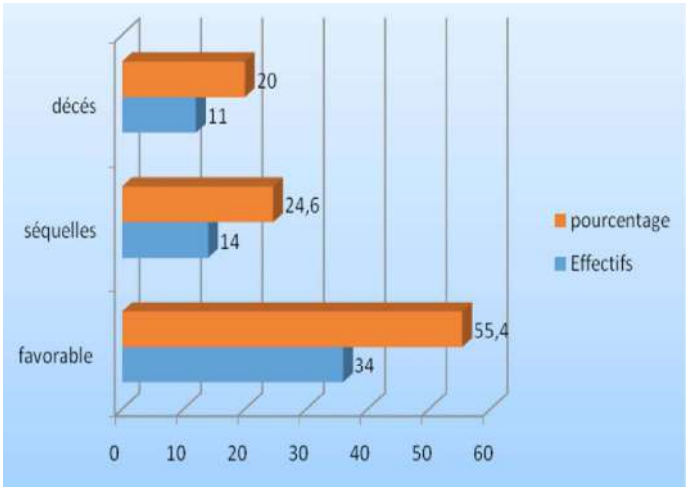
wn (vmM / Tgr ctvkvkqp f gu r cvkgpvu ugnqp nc vtcpej g f ci g gv ng ug g:



wn (vmN /Tgr ctvkvkqp f gu rtgugpvcvkqpu erkpkswgu f g pqu rcvkgpvu



wn (vml /Tgr ctvkvkqp ugnqp rgu ecxugu i , pègeq. qduvègvtlecngu



wn (vmK /Tgr ctvkvkqp f g nègyqnxvkqp f g pqu rcvkgpvu

deond(/Tgr ctvkvkqp f guvqr qi tcr j kguê rflo ci gtkg ej g pqu rcvkgpvu)pW<J -

	Effectifs	Pourcentage
Localisation multiples	22	37,3
TV du SSS	9	15
TV du SSS et SD	7	12
TV des veines profondes	6	10,2
TV du SSS et SLG	4	6,8
TV du SD	3	5,1
TV du SSS et SLD	3	5,1
TV du SLG	3	5,1
TV du SLD et SLG	2	3,4
Total	**59**	**100**

deond(/Tgr ctvkvkqp f gu cpqo cnkgu r ctgpej , o cvgxugu)pW9: -

	Effectifs	Pourcentage
TVC + AVCI	6	18,7
TVC + AVCH	5	15,6
Hypodensité frontale droite	4	12,5
Hématome cortical gauche	2	6,2
Hyperdensité lobaire occipitale gauche	1	3,1
Hémorragie méningée + hémorragie VL	1	3,1
Hémorragie méningée	1	3,1
Autres*	12	37,5
Total	**32**	**100**

Eut es, @

/ EPdu te itoi e s lvien te inal et cent al d oit en hase d d e

/ Vésion séquellai e a iétale osté ieu e d oite

/ J ffface ent des sillons co ticau et vent icules colla–és

/ Ra ollisse ent te o o/ a iétal oauche co essif

deond(/Tgux ncvu f x dkrcp dkqnqi ls xg

Biologie	Basse	Normale	Elevée
Plaquettes		54	05
Hémoglobine	25	34	
Leucocytes	2	37	20
TP	14	45	
D-dimères		06	53
CRP		40	19
VS		41	18

deond(c /Tgrctvkvkqp ugnqp ngvkqnqi kg

Causes	Effectifs	Pourcentage
Gynéco-obstétricales	21	36,4
Infectieuses	20	32,2
Indéterminées	14	24,6
Déficit en protéines C et S	2	3,4
Locales	2	3,4
Total	59	100

deond(c /Tgrctvkvkqp f x ukgi g f g nc vj tqo dqug f crtgungu f qppgguf g nko ci gtkg

	ISCVT (n=624)	Série Lariboisière (n=332)	Notre série (n=59)
Sinus sagittal supérieur	62%	53%	37,4%
Sinus latéral droit	41%	20%	6,7%
Sinus latéral gauche	45%	41%	8,4%
Sinus droit	29%	17%	17,4%
Système veineux profond	29%	17%	10,2%
Veines corticales	17%	20%	0%

deond(c /Rtgycngpeg f gu cpqo cnkgu eqpuvkxvkqppgnguf g nj go quvcug f cpu ngu vj tqo dqugu ygkpgxugu eg tgdtcngu

	Protéine AT III	Prot S	Prot C	Facteur V Leiden	Mutation G20210A du gène du facteur II	Nombre patients
Reuner [33]	0%	4,4%	4,4%*	11%*	8%	45
Deschiens [28]	0%	2,5%	2,5%	10%	-	40
Zuber [34]	0%	0%	0%	21%	-	19
Martinelli [35]	2,5%***	0%	0%	15%***	20%***	40
Daif [31]	-	5%	-	7,5%	-	-
Najim [36]	-	4,7%	9,5%	-	-	-
Notre Série	0%	1,7%	1 ,7%	-	-	59

, un déficit co –iné g m/ Fw Veiden

,, un déficit co –iné oth o –ine gH. g m

,,, un déficit co –inéEp / Fw Veiden et un déficit co –iné utation L 42432E du œne du facteu PP/ Fw Veiden

deond(c /Gtgsxgpeg f gur tkpekr cngu gsxgnguf g a' D

Séries	Preter 1996 [41]	Breteau 2002[42]	ISCVT 2004 [5]	Deekshanti 2012 [43]	Notre série
Nombre de patients	110	55	624	428	59
Déficit neurologique	9%	10%	13%	25%	13%
Epilepsie	4%	13%	10,6%	1,1%	8,6%
Récidive	8%	0%	2,2%	5,1%	3%

deond(c /Fyqnxvkqp f g a' Dfcpufguugtkgutgegpvgu

Auteurs	Nombre de cas	Favorable	Décès
Milandre et al. (1989)	20	6 (30%)	3 (15%)
Einhaupl et al. (1991)	71	6 (8,5%)	10 (14%)
Ameri et Bousser(1992)	110	85 (77%)	6 (5,5%)
Daif et al. (1995)	40	29 (72%)	4 (10%)
Tsai et al.(1995)	29	1 (3,5%)	6 (21%)
Ronde Pierre et al (1995)	32	7 (39%)	7 (39%)
Ferro et al. (2004)	624	439 (79%)	52 (8,3%)
Stolz et al(2005)	79	50 (71%)	14 (20%)
Bugnicourt et al. (2008)	16	6 (37,5%)	0 (0%)
Bensalem-Berrabah et al. (2009)	26	20 (77%)	2 (7,7%)
Napon et al. (2010)	17	6 (58,8%)	5 (29,4%)
Notre série	59	34 (55,4%)	11 (20%)

4 4vnt i m

´2¨ Dcrncp MlUvtqnqgAC Dnkplecn Crrtqcej 1Fnugykgt L gcnvj Uekgpegu1 : 88J K==I 1

´:¨ FnNkfcqxk C' Uqxktvk –' Nguuqxcnuq' [gncjugpN GDgtgdtcnyg. pqxuvjtqo dquku1Cppcnug f g N ègf gekpg gv f g aj gtcrgxvksxg1 : 88J K2 A; ; <8´:¨

´9¨ Eg [txkkp UG Egjccp TwUvco vtDnkplecn hgcvxtgu cpf rtq. ipquvke hcevqtu qh egtgdtcn ygpqxu ukpxu vjtqo dquku kp c rtqurgevkyg ugtkgu qh<J rcvkgpvu1wOgxtqnOgxtquxti Ru, ejkc. vt, 1 882 KB8 A28<.28I

´;¨ Ggttq vN' Dqttgkc N' Rqpvgu D' cpf cn1Dgtgdtcnygkp cpf fxtcnuk pxu vjtqo dquku kp Rqtvxixcn1Dgtgdtqycuefkue1 882 K22 A 2BB.I : 1

´<¨ Ggttq vN' Dcpj cqR'Uvco vwcpf cn1]UD' a]pyguvkicvqtu1Rtqipq. ukuqhegtgdtcnygkp cpf fxtcnukpxuvjtqo dqukuAtguxnvuqhvjg]pvgtpcvkqpcnUvxf, qp Dgtgdtcn' gkp cpf ExtcnUkpxuajtqo. dquku)]UD' a-1Uvtqnq : 88; K9<A==; B81

´=¨ EckhC' C cfc C' CnTclgj U' cpf cn1Dgtgdtcn' gpqxuajtqo dq. ukukp Cfxnu1C uvxf, qh; 8 ecuguhtqo UcxfkCtcdkc1Uvtqnqg 2JJ<K: = A22J 9.22J<1

´B zjgcncpk [C' ± cuc, N' Uccfcj N' cpf cn1Dgtgdtcn ygpqxu vjtqo dqukuAc fguetkrvkyg o xnvkegpvgt uvxf, qhrcvkgpvukp Rc. mkuvcp cpf Nkffrg Fcuv1Uvtqnq : 881 K9J A: B8B 221

´I¨ ± cuc, N' [cmujkT' [qdxuvxe H' cpf cn1Dgtgdtcnygpqxuvjtqo. dqukuAcpcn,uku qh c o xnvkegpvgt eqjqtv htqo vjg bpkvgf Uvcvgu1wUvtqnq Dgtgdtqycue Eku1: 88I K28 A; J.<; 1

´J¨ Ocrqp D' Ekcnuj P' zcp, cnc F' zcdqtg vtMgu vjtqo dquguygk pgxugu eègtgdtcngu gp o kdgx j qurkvcnkgt ĉPxcicfqxiqx)[xt. mkpc Gcuq-1TgyOgxtqn: 828 K2== A; 99 B1

´28¨ Ofkc, g N' Hxg, g N' Ofkc, g]R' gvcn1Mguvjtqo dqrjnègdkvgu eè. tègdtcngu ĉEcnct1Ecnct Ngf 2JIBK9; AI 1

´22¨ Mcpunc Evvzt, uekq TwUvco vtTkumhcevqtuhqt rgtkrctvxo cpf rquv.rctvxo uvtqnq cpf kpvtcetcpkcn ygpqxu vjtqo dquku1Uvtqnq : 888 K92A2: B; .I : 1

´2:¨ Dqxvkpjqvw' –xxtdkgt UN' Ctcokfgj N' Uvco vtajgkpekfgpeg qh egtgdtcn ygpqxu vjtqo dqukuAc etquugevkqpcn uvxf, 1 Uvtqnq vDgtgdDkte: 82: K; 9 A99B<99BB1

´29¨ Ukfjqo oé Ncpuqxt N' –cqxcnkvN Ntkuuc TwMc vjtqo dqug ygk pgxug eègtgdtcnq Aectcevègtkuvksxgu enkplsxgu' ègvkqnqiksxgu gv ègyqnxvkygu f g ; 2 rcvkgpvuvxpkukgpu1Tgyxg Ogxtqnqikg1 829 K 2=J AB<.J=1

´2;¨ [qxuugt Ni' Djktcuv[qtkguvcpf cn1Dgtgdtcn' gpqxuajtqo. dquku.C Tgylg qh9I ecugu1Uvtqnq 2J I < K2=': A2JJ.: 291

´2<¨ [gpucngo Pd' Ggmkj.Ntkuuc O' MqxcvkM cpf cn1Dgtgdtcnyg. pqxuvjtqo dquku ARtqurgevkyg gvkqnqiiecnuvxf, qh: = axpk ukcp rcvkgpvu1Tgy Ogxtqn 822 K2=BA2; 2.2; J 1

´2=¨ Tqigtu MT1Dgtgdtqycuexnct eqo rnkecvkqpu kp rcvkgpvu kvj ecpegt1Ugo kpOgxtqn1: 88; K: ; A; <9 ; =81

´2B Tqugpuvkpi nU' Txkyctf N' Ngnqp F' gvcn1ajtqo dqrjnègdkvg eè. tègdtcngA ègvxfg tègvtqurgevkyg f g ykpiv.ugrv ecu1 Tgy Ngf]pvgtpg : 88: K: 9 AJB9 I : 1

´2I¨ Dtcuuctf]' Co gtkC' Tqxigo qpv E' [qxuugtN H1ajtqo dquqgu ygkpgxugu eègtgdtcngu1FN D Ogxtqnqikg : 82: KJ A2.2; 1

´2J¨ Eco cmN' Dtcuuctf]' ± qnh'' [qxuugt N H1]uqncvgf ncvgtcnuk pxuvjtqo dqukuAc ugtkgu qh=: rcvkgpvu1Uvtqnq : 88J K; 8 A ; B= I 21

´:8¨ Nkucpftg M Hxgtkqv D' CnkDjgtkhC' gvcn1Mguvjtqo dquqgu ygk pgxugu eègtgdtcngu f g ncfxng1Cur gevu fkcipquvksxgu gv vjè. tcrgxvksxgu ĉrtqrquf g : 8 qdugtycvkqpu1Cppcng Ngf]pvgtpg)Rctku-12JIJ K29J A<; ; .<<; 1

´:2¨ Fkpjcxrnz N' ' ktkpigt C' Ngkuvgt ±' cpf cn1Lgrctkp vtgcv. o gpvkp ukpxu ygpqxu vjtqo dquku1Mcpegv 2J J 2 K99I A<JB. =881

´ : :¨ Ggttq vN' Dcpj cq R' Uvco v/cpf cm1Egmc, kp vj g f kci pquku qheg. tgdtcn ygkp cpf f xtcn ukpxu vj tqo dquku Akp»nxgpeg qp qxv. eqo g1Uvtqmg : 88J K; 8 A9299 I 1

´ : 9 Cpf gtuqp UD' Uj cj DR' Nxtvci j GT1Dqpi guvgf f ggr uxdeqtvk ecnygkpu cu c uki p qhf xtcnygpqxu vj tqo dquku1wDqo r xv Cu. ukuvaqo qi t2JJ I B K22 A28<J .28=21

´ : ;¨ Rqqp DU' Dj cpi vz' U ctpmct C' cpf cm1Tcf kqmqi le f kci pquku qh egtgdtcn ygpqxu vj tqo dquku A r levqtkcn tgykg 1 CvF : 88B K 2I J A=; .B<1

´ : < Tqf cmgeNj ' z j ckpkm C' Gg, f, C cpf cm1 Dgtgdtcn ygpqxu vj tqo dquku cpf o xnvkf gvgevqt eqo r xvgf vqo qi tcr j , cpi kq. i tcr j , 1: 88= K: = A2<. 2I 1

´ : = auckGoé ± cpi CN' Ncvqykej ' [' cpf cm1NT uvci kpi qh cexvg f xtcn ukpxu vj tqo dquku Aeqttgmcvkqp kvj ygpqxu rtguuxtg o gcuxtgo gpvu cp ko r nkecvkqp hqt vtgcvo gpv cpf rtqi pquku1 CvØT Co wOgxtqtcf kqm12JJ < K2= A28: 2.28: J 1

´ : B Cnqpuq. Dcpqycu C' N culxcp v/Hqp cng .' cnectegnv/cpf cm1Dg. tgdtcn ygpqxu vj tqo dquku A j gp gvkqmqi , o cngu vj g f khhg. tgpeg1Ogxtqmqi kc1 88J K: ; A; 9J ; <1

´ : I¨ Eguej kgpu N C' Dqpctf v/L qtgmqx N L' cpf cm1Dqci xncvkqp uvxf kgu' hcevqt ' Mgkf gp' cpf cpvkectf kqnkr kp cpvkdqf kgu kp ; 8 ecugu qh egtgdtcn ygpqxu vj tqo dquku1Uvtqmg1 2JJ = K: B A 2B: ; .981

´ : J¨ Mcnkyg RL' Eg N qgtnqqug R' Mqydncf z' cpf cm1]u o gcuxtgo gpv qh E. f ko gt xughxnkp vj g f kci pquku qhegtgdtcnygpqxu vj tqo . dquku1Ogxtqmqi , : 889 K=2 A28<B. =81

´ 98 [qxpco gcx' L' Rgttkgt C' ± gmu RU1Dnkplecncpf ncdqtcvqt, f kci pquvkeu qhf ggr ygkp vj tqo dquku Apg equvghtgevkyg uvtc. vgi kgu1Ugo kp' cue N gf 1: 882K2 A9J .; : 1

´ 92 Dtcuuctf]' Uqtkc D' a qxtkq D' cpf cm1C pgi cvkyg E. f ko gt cuuc, f qgu pqv txng qxv egtgdtcnygpqxu vj tqo dquku Ac ugtkgu qhug. ygpv, . vj tgg r cvkgpvu1Uvtqmg : 88<K9= A2B2= J 1

´ 9:¨ Tkf mgt RN' N kqmkvej vR' L gppgmgpu DL' cpf cm1Fvj ple f kuvtkdx. vkqp qh hcevqt ' mgkf gp kp ; 8; B o cp cpf qo gp1]o r nkecvkqp hqt ygpqxu vj tqo dqgo dqnkuo uetggpkpi 1VCN C 2JJ BK: BBA 298<. B1

´ 99 Tgxpgt z L' Txh C' Htcx C' gv cmRtqvj tqo dkp i gpg H: 8: 281C vtcpukvkqp ku c tkumhcevqt hqt egtgdtcn ygpqxu vj tqo dquku1 Uvtqmg 2JJ I K: J A2B=<. J 1

´ 9;¨ –xdgt N' aqxnqp R' N ctpgv M N cuvM Gcevqt ' Mgkf gp o xvcvkqp kp egtgdtcnygpqxu vj tqo dquku1Uvtqmg 2J J = K: BA2B: 2.91

´ 9< N ctvkpgmkj' [cwci nkqnq a' Rgf qvkcR' cpf cm1L, rgtj qo qe, uvgk pgo kc kp egtgdtcnygkp vj tqo dquku1[nqqf 1 889 K28: A29=9. 29==1

´ 9= Ocllo CnEkp CU' Nxdckfkp C' ± tkgmcv Cn Cns co N 1Tkumhce. vqtu qh cugr vke kpvtcetcpkcn ygpqxu qeenxukyg f kugcug1 Ce. vcOgxtqnUecpf 12JJ ; KJ 8 A; 2: =1

´ 9B [qxuugt N H' Dtcuuctf]1Dgtgdtcn ygpqxu vj tqo dquku' rtg. ipcpe, cpf qtcneqpvtcegr vkygu1aj tqo d Tgu1: 82: K298 A2J . : : 1

´ 9I¨ [gpj co qxf c M N tcdgv C' [gpj co kf c N 1aj tqo dqugu ygk pgxugu eg tgdtcngu gv kphctevxu eg tgdtcx cx eqxtu f g nc i tqu. uguug gv f x r quv. r ctvxo bpg ug tkg f g =8 ecu1 TgyOgxtqn)Rctku- 2JJ < K2<2' 28 A<=9. <=I 1

´ 9J¨ Eg [txkp UG' [xf f g N' agxpkuug U' cpf cm1Mqpi . vgto qxveqo g qh eqi pkvkqp cpf hxpevkqpcn j gcnvj chvgt egtgdtcn ygpqxu vj tqo dquku1Ogxtqmqi , : 888 K<; A2=I B. 2=I I 1

´ ; 8 Ucr qupkmH' [ctkpci cttgo gpvgtkc G' [tq p TE' cpf cm1Ekci pq. uku cpf N cpci go gpv qh Dgtgdtcn' gpqxu aj tqo dquku C Uvcvg. o gpv hqt L gcnvj ectg Rtqhguukqpcnu Gtqo vj g Co gtkecp L gctv Cuuqekcvkqp 7Co gtkecp Uvtqmg Cuuqekcvkqp1Uvtqmg1 822 K; : A 22<I . 22J : 1

´ ; 2 Rtgvgt N' a qxtkq D' Co gtkC' [qxuugt N H1Mqpi . vgto rtqi pq. ukukp egtgdtcnygpqxu vj tqo dquku1C hqmq .xr qh BB r cvkgpvu1 Uvtqmg 2JJ = K: B A: ; 9. : ; =1

´ ; :¨ [tgvgcx H' N qxplgt. ' gj kgtGo ' Hqf ghtq, P' cpf cm1Dgtgdtcnyg. pqxu vj tqo dquku19., gct enkplecnqxv eqo g kp << eqpugexvkyg r cvkgpvu1wOgxtqm1: 889 K: <8 A: J 9<1

´ ; 9 Eggmuj cpvkO' Ukdj cuj z' Tcykuj cpmct z' cpf cm1Tkumhcevqtu' enkplecnr tq»kng' cpf nqpi . vgto qxveqo g qh; : I r cvkgpvu qheg. tgdtcnukpxu ygpqxu vj tqo dquku A]puki j wu htqo Ok co u]puvk vxvg ' gpqxu Uvtqmg Tgi kuvt, ' L, f gtcdcf)]pf kc-1Ogxtqmqi , kpf kc 1: 82: K=8 A2<; .2<J 1

´ ; ;¨ [qxuugt N H' Ggttq vN 1Dgtgdtcn ygpqxu vj tqo dquku Acp xr. f cvg1Mcpegv: 88BK= A2=: .B81

´ ; < Ggttq wo ' Mqr gu wo ' Tqucu N v/cpf cm1hqt vj g Dgtgdtcn' gpqxu aj tqo dquku Rqtvxi xgug Dqmcdqtcvkqp Uvxf , Htqxr)' FOP. RP Ta-1Mqpi . vgto rtqi pquku qhegtgdtcnygkp cpf f xtcnukpxu vj tqo dquku1Dgtgdtqycue Eku1: 88: K29 A: B: . : BI 1

´ ; = Uvtxr r N' Dqykn' Ugg mqu z' cpf cm1Dgtgdtcnygpqxu vj tqo dq. uku Aeqttgmcvkqp dgv ggp tgecpcmkucvkqp cpf enkplecnqxveqo gA c nqpi vgto hqmq .xr qh; 8 r cvkgpvu1wOgxtqm1: 88: K: ; J A 22: 9 ; 1

´ ; B Ggttq vN' Dtcuuctf]' Dqxvkpj q vN' cpf cm1Egeqo rtguukyg Uxt. igt, kp Dgtgdtqygpqxu aj tqo dquku C N xnvkegpvgt Tgi kuvt, cpf c U, uvgo cvke Tgykg qh]pf kykf xcn Rcvkgpv Ecvc1Uvtqmg : 822 K; : A: I : <. : I 921

´ ; I¨ Egdtxkp UG' Uvco v/z qqr o cp N N' ' cpf gpdtqxengvRTGqt vj g egtgdtcnygpqxu ukpxu vj tqo dquku uvxf , i tqxr 1]petgcugf tkum qhegtgdtcnygpqxu ukpxu vj tqo dquku kvj vj ktf . i gpgtcvkqpq. tcneqpvtcegr vkyg1Mcpegv2JJ I K9<2 A2; 8; 1