ÞUÜVP Y ÒÙVÒÜÞÁWÞQXÒÜÙQV	/Ϋ́Á
ÚÜURÒÔVÁÞŒTÒÁ´´´´	
RUÓÁÀÁ´´´´´´Á	

ØUÜKÁ′′′′Á QÙÙWÒÖKÁG€GIÈFÁ

ÙÒÔVQUÞÁ€ÏÁÍ IFJÁËÁÚUŠŸXQÞŸŠËÔPŠUÜQÖÒÁÇÚXÔDÁÜUUØQÞŐÁ

ÕÒÞÒÜŒŠÁ

FÈFÁ ÜÒŠŒVÒÖÁÖUÔWTÒÞVÙÁ

ŒĖÁ Ö¦æ¸i} *•Á æ}åÁ *^}^!æ|Á]¦[çi•i[]•Á [-Á c@^Á Ô[}c!æ&ċÉÁ i}&|~åi}*Á Õ^}^!æ|Á æ}åÁ Ù~]]|^{^}cæ!^Á

ÞUÜVP Y ÒÙVÒÜÞÁWÞQXÒÜÙQVÌ	ŻÁ
ÚÜURÒÔVÁÞŒTÒÁ´´´´	Á
RUÓÁÀÁ ´´´´´Á	

ØUÜKÁ 1	•	•	•	•	•	•	•	•	•	Á
QÙÙWÒ	Ö	ΚÁ	G	€	G	П	ÈF	-Á		

- Ü^çā^ [Áå^&\Á•`à•c¦æc^Á¦^`ĭä¦^{^}c•Á~[!Á&[}åācá[}•Áæ}åÁ-ā}ā•@^•ÊÁā}&|`åā}*Á~|æc}^••Áæ}åÅ I ÈÁ ~æ•c^}ã}*ÈÁ
- ÍÈÁ Ü^çā^ 、Á•c¦`&c`¦æ|Á|[æåā}*Á|ā{ācæcā[}•Á[~Á¦[[~Á&^&\Áå`¦ā}*Áæ}åÁæ~c^!Á¦[[~ā}*ÈÁ
- Ü^çā^¸Áàæ•^Á-|æ•@ã}*•ÉÁ•]^&áæ|Á¦[[-ã}*Áª^cæá|•ÉÁ¦[[-Á妿á}æ*^ÉÁ¦[[-Á]^}^c¦æcá[}•ÉÁ^~~ã]{^}cÁ &`'\a`•Ê\Aæ}&\&\[}&acai[}\A|c@^\\A&[}*oc\`&cai[}\Ac@æc\Aæ~~^&c*\A\|[[~a]*A*^*oc^{\EA}
- ΪÈÁ
- Ü^çâ^ ^^* [ç^!}ã} *Á!^* `|æcâ[}•Aæ}åÁ!^` `ã!^{^}c•Á-[!Ái}• `!æ}&^Aæ}åÁ&^!cå-ã&æc^•Ái-Æ]]|ã&æà|^ÈÁ Ü^çâ^ ,Ác^{][!æ!^Á]![c^&câ[}Á!^` `ã!^{^}c•Á-[!Á![[-ā}*Á•^•c^{{Áa*!ā}*Áæ}åÁæ-c^!Ái}•cæ||æci[}ÈÁ ÌÈÁ
- JÈÁ Ü^çi^ . Á¦ [[~Á [à•^¦çæci [} Áæ } åÁ¦^]æi¦Á]¦ [&^å ˇ ¦^•Áæ~c^¦Á¦ [[~i] *Ái} •cæ||æci [}ÈÁ
- ÓÈÁ Ú!^ā}•cæ||æcā[}ÁÜ[[~ā}*ÁÔ[}~^!^}&^KÁÔ[}a*&cÁ&[}~^!^}&^Á æcÁ Ú![b^&cÁ•āc^Ác_[Á _^^\•Á à^-[!^Á •&@^å |^åÅ•cæ¦cÁ[-Á¦[[-Á•^•c^{Áå}•cæ||æcá[}ÈÁ
 - T^^cÁ¸āc@ÁU¸}^\ÊÁŒ{&@āc^&cÊÁU¸}^\C•Áā}•`!^\Áā-Áæ]]|i&æà|^ÊÁc^•cā}*Áæ}åÁā}•]^&ca}*Aæ*^}&^A '^]'^•^}cæciç^ÉÁ |[[-a}*ÁQ}•cæ||^!ÉÁ |[[-a}*Á•^•c^{Á {æ}`~æ&c`!^!C•Á |^]!^•^}cæciç^ÉÁ a^&\Á Q}•cæ||^\ÊAæ}åÁā}•cæ||^\•4¸@[•^Á¸[!\Aā}c^\~æ&^•Á¸āc@Á[!Áæ~~^&c•Á\[[-ā}*ÊAā}&|~åā}*Aā}•cæ||^\•Á[~Á
 - | [[-Áæ&&^••[lá^•Áæ}åÁ| [[-Ē { [~] c^åÁ^~~ã] { ^}cĒÁ | U^çá^_, Á { ^c@ [å•Áæ}åÁ] | [&^å~ | ^•Á|^|æc^åÁc[Á| [[-ā}*Áā}•cæ||æcā[}ÊÁā}&|~åā}*Á { æ}~~æ&c~|^!0•Á GÈÁ ¦ãcc^}Àã}•c¦~&cã[}•ÈÁ
 - HÈÁ Ü^çā^¸Áæ}åÁ~á}æ|á:^Á&[}•c|`&ci[}Á•&@^å`|^ÉÁæ}åÁç^¦ä~^Áæçæi|æài|ic^Á[~Á{æc^¦äæ|•ÉÁQ}•cæ||^¦()•Á]^{•[}}^|Eh^~~i]{^}cEhæ}åh-æ&i|icin^•h}^^å^åhc[h{æ\^h]![*!^••hæ}åhæç[iåhå^|æ^•Eh
 - Ò¢æ{å}^Áå^&\Á•`à•c¦æc^Á&[}åäcä[}•Áæ}åÁ-ä}ã•@^•Á-[ÏÁ&[{]|ãæ}&^Á¸äc@Á¦^``ä¦^{^}c•ÊÁ I ÈÁ ã}&|~åã} *Á~|æc}^•Áæ}åÅ~æ•c^}ã} *ÉÅ
 - ÍÈÁ Ü^çā^¸Å•c¦`&c`¦æ|Á|[æåā}*Á|ā{ācæcā[}•Á[~Á¦[[~Áå^&\Áå`lā}*Áæ}åÁæ-c^¦Á¦[[-á}*ÈÁ
 - ÎÈÁ Ü^çā^¸Áàæ•^Á-|æ•@ã}*•ÉÁ•]^&áæ|Á¦[[-ã}*Áª^cæá|•ÉÁ¦[[-Á妿á}æ*^ÉÁ¦[[-Á]^}^c¦æcá[}•ÉÁ^~~ã]{^}cÁ &`¦à•ÉÀæ}åÅ&[}åäæï[}Å[~Á[c@^¦Á&[}•c¦`&æï[}Ác@æcÁæ~~^&c•Á¦[[~ä}*Á•^•c^{ÉÁ
 - Ü^çā^ h*[ç^\;}ā} *A\^*`|æcā[}•Aæ}åA\^``ā\^{^}c•A-[\Ai}-*\ai\^*\æ}&^Aæ}åA&^\cā-ā&æc^•Ai-Aæ]]|i&æà|^ÈA Ü^çā^ h.^{{}}[!æ\^A]![c^&cā[}h!^``ā\^{^}c•A-[\Ai][[-ā}*A•^•c^{Aa`\ā}*Aæ}åAæ-c^\Ai}•cæ||æcā[}ÈA ΪÈÁ
 - ÌÈÁ
 - JÈÁ Ü^çi^¸Á¦[[~Á[à•^¦çæɑi[}Áæ}åÁ¦^]æi¦Á]¦[&^å`¦^•Áæ~c^¦Á¦[[~i}*Ái}•cæ||æci[}ÈÁ

FÈÍÁ ŒÔVQUÞÁÙWÓTQVVŒŠÙÁ

- ŒĚÁ Ú¦[å*&cÁ ÖæcæKÁ Ü[[-ā}*Ē•^•c^{Á {æ}*~æ&c*¦^¦0•Á |āc^¦æc*¦^ĒÁ ā}&|*åā}*Á ¸¦ācc^}Á ā}•c¦*&ci[}•Á ~[¦Á ^çæ|`æci} *ÉÁ]!^]æ¦i} *ÉÁ æ}åÁ c!^œci}*Á •`à•c!æc^LÁ c^&@}i&æ|Á åæcæÁ i}&|`åi}*Á c^•c^åÁ]@^•i&æ|Á æ}åÁ]^{~[¦{ æ}&^Á]¦[]^¦cā^•LÁæ}åÁæ]]|ã&æcā[}Áā}•c¦~&cā[}•ÈÁ
 - FÈÁ Ø[¦Á{^{à!æ}^Áæ}åÁàæ•^Á-|æ•@á}*Á{æc^¦áæ|•ÉÁæ}åÁ¦[[-ā}*Á&^{^}cÉÁ]¦á{^*EÁ{æ•cá&Á•^æ|æ}cÉÁ æ}åÅ~æ•c^}^¦•ÉÅ
 - GÈÁ Q}&|`å^Ác^{]^\ac`\^Á\æ}*^•Á-[\Á•c[\æ*^Áæ}åÁæ]]|i&æci[}Á[-Á {æc^\iæ|•ÉÁæ}åÁ•]^&iæ|Á&[|ÅÉ ^æc@^¦Åæ]]|ã&æcã[}Ŧ^~~~ã¦^{^}c•Á[¦Á|ã{ãcæcã[}•ÉÁ
 - Q}&|~å^Á Ùæ-^c^Á ÖæcæÁ Ù@^^c•Á ÇÙÖÙDÁ ~[¦Á á}~[¦{æcá[}Á [}|^LÁ •æ-^c^Á ¦^•c¦á&cá[}•Á æ¦^Á •[|^Á '^•][}•āàā|āc^Á[~ÁÔ[}c¦æ&c[¦ÈÁ

ŠÒÒÖÁÙ ~à { ãccæ|•KÁ ÓÈÁ

- Ú¦[å *&cÁ ÖæcæÁ ~[¦Á Ô!^åācÁÙÙÁÏÈGKÁ Ø[¦Á¦[[~Á {æc^¦āæ|•ÊÁ å[& * {^}cæci[}Áā}åā&æcā} *Á c@æcÁ¦[[~Á FÈÁ { œc^¦åæ|•Á& [{] | ^Á , åc@ÁÙ [|æ¦ÁÜ^~|^&cæ}&^ÁQ} å^¢Á¦^~~å¦^ { ^}cÈÁ
- Ú¦[å~&cÁ ÖæcæÁ~[¦Á Ö¦^åäcÁQÒÜÁIǏ}ā ÐWç&&^c~cÇ]Çç]^Ē[\¸Áā&c@^]][ç{¸Áāå@{[^[c@¸ÖāÁØ ÖÁ

ÞUÜVP Y ÒÙVÒÜÞÁW Ł)	X(Ć	Ü	Ù	JQ'	V	Ϋ	İ
ÚÜURÒÔVÁÞŒTÒÁ´´´	,	, ,	,	,	,	,	•	•	į

ØUÜKÁ * * * * * * Á

ÞUÜVP Y ÒÙVÒÜÞÁWÞQXÒÜÙQV	Ϋ́Á
ÚÜURÒÔVÁÞŒTÒÁ	Á
RUÓÁÀÁ´´´´´Á	

ØUÜKÁ′′′′Á QÙÙWÒÖKÁG€G IÈFÁ

RÈÁ 0}&|^{^}cÁY^æc@^¦ÁÚ![c^&cai[}ÁÚ|æ}KÁÁ¸!ācc^}Áå^•&!ā]cai[}Á[-Ác@^Áæ&cai[}•Ác@æcÁ¸ā|Áà^Ácæ\^}Ác[Á]![c^&cAcAcai]}áai}*Áa`iai}*Áa`iai}*Á&[}•ci`&cai[}ÈÁÁÁ

FÈĨÁ ÔŠUÙÒUWVÁÙWÓTQVVŒŠÙÁ

- $CE\dot{A} T \varpi\dot{a} c^{2} \varpi \left(\dot{A} \dot{A} \dot{A} \dot{A} \dot{A} \right) = \dot{A}
- ÓĖÁ Ü[[-ā}*Ë•^•c^{Á{æ}`~æ&c`!^!(•Áā}•]^&cā[}Á!^][!cÁ[-Á&[{]|^c^åÁ![[-ā}*Áā}•cæ||æcā[}ÈÁ

FÈÏÁ ÛWŒŠQVŸÁŒÙÙWÜŒÞÔÒÁ

- ŒÈÁ Tæ}~æ&c~¦^¦ÁÛ~æ|ā~ā&æcā[}•KÁÁ

 - GÈÁ ŒÁ&[{]æ}^Ác@æcÃ@æ•Á]¦[å~&^åÁ¦[[-ā}*Á {æc^¦āæ|•Áæ}åÁæ&&^••[¦ā^•Á[-Ác@^Ác^]^Áā}&|~å^åÁā}Á
 c@ā•Á•^&cā[}Á-[¦ÁæcÁ|^æ•cÁÍÁ^^æ!•ÈÁ

ÓÈÁ Q} •cæ||^¦ÁÛ ~æ|ã~ã&æcã [} •KÁÁ

- FÈÁ ŒÁ ~ æ|ā-ā^åÁ-ā! { Ác@æcÁā•Áæ]]![ç^åÉÁæ ~ c@ [!ā:^åÉÁ [!Á|ā&^}•^åÁà^Á![[-ā}*Á•^•c^ { Á {æ} ~æ&c '!^!Á c [Áā}•cæ||Á {æ} ~æ&c '!^!C•Á]![å ~&cÁæ}åÁc@æcÁā•Á^|ā*āà|^Ác[Á!^&^āç^Á {æ} ~æ&c '!^!C•Á•]^&āæ|Áæ;æ!!æ}c^ÉÁ
 - æĚÁ Øˇ¦}ã•@Ác[Ác@^ÁW}ãç^!•ãc^ÊÁà^-[!^Á![[-ā}*Á&[}clæ&cÁæ¸æ¦åÊÁ¸!ācc^}Áå[&ˇ{^}cæcā[}Ác@æcÁ ā}•cæ||^!Áā•Á{æ}ˇ-æ&cˇ!^!Ë&^!cā-ā^åÁc[Áā}•cæ||Á![[-ā}*Á•^•c^{•Á[-Ác@^Ác^]^Áā}&|ˇå^åÁā}Á c@ā•Á•^&cā[}ÈÁ
- GÉÁ V@^Áā} •cæ||^¦Á•@æ||Á^¢^&~c^Ác@^Á^}cä!^Á]![b^&cÁ¸āc@ÁæÁ•ā}*|^Á&!^¸Áæ}åÁ•~]^¦ā}c^}å^}cÈÁ
- HÉÁ Q} cæ||^!Á• `]^!çā•ā[}KÁPæç^Áā} cæ||^!Áāå^}cā- ÂæÁ• `]^!çā•[!Á¸āc@ÁæcÁ|^æ•cÁÍÁ^æ!•Á[-Á^¢]^!ā^}&^Á
 ā}Ác@^Áæ]]|ā&æcā[}Á[-Ác@^Ác^]^Á[-ÁUXÔÁ![[-ā}*LÁ•^•c^ {Áā}Áā}&|`å^åÁā}Ác@ā•Á•^&cā[}ÊÁc[Á]![çāå^Á
 -`||Ēcā {^Á!^çā^¸Á[-Á![[-ā}*Áā}•cæ||æcā[}Á¸[!\ÈÁ

FÈÌÁ ÖÒŠQXÒÜŸÊÁÙVUÜŒÕÒÊÁŒÞÖÁPŒÞÖŠQÞŐÁ

- CEÁ Ö^|āç^!Á! [[-ā} * Á { æc^!āæ| Ác [ÁÚ! [b^&cÁ•āc^Áā} Á [!ā*ā}æ|Á& [} cæā}^!• Á¸āc@Á•^æ|•Á`}à! [\^} Áæ} åÁ|æà^|^åÁ¸āc@Á
 { æ} ~æ&c`!^!C•Á}æ { ^ÉÁ]! [å ~&cÁ à!æ} åÁ }æ { ^Áæ}åÁ c^]^ÉÁ åæc^Á [-Á { æ} ~æ&c`!^ÉÁæ]]! [çæ|Á [!Á|ā•cā} *Á
 æ*^}&^Á { æ!\à} * •ÉÁæ} åÁåā!^&cā [} •Á-[!Á•c [!ā} *Áæ}åÁ { āçā} *Á¸āc@Á [c@^!Á&[{] [}^}c•ÈÁ
- ÓÈÁ Ùc[!^Á|ā~~ãåÁ { æc^!āæ|•Áā}Ác@^ā!Á[!ā*ā}æ|Á~}åæ { æ*



ØUÜKÁ * * * * * * * * * * * * Å QÙÙWÒÖKÁG€G I ÈFÁ

- æÈÁ Ü^]æålÁ ['Á '^]|æ&^Á &[{] [}^}c•Á [-Á | [-ā }*Á •^•c^{ { Á c@æcÁ å [Á } [cÁ &[{]]^Á _ ác@Á | [-ā }*Á •^•c^{ { Á c@æcÁ å [Á } [cÁ &[{]]^Á _ ác@Á | [-ā }*Á •^•c^{ { Á c@æcÁ æālÁ ā} Å æå@^•ā[}ÈÁ &[@^•ā[}ÈÁ [!Á *^}^\#Ä * | [*Á*c@æcÁ å^c^!ā[| æc^Áā} ÅæÁ { æ} }^!Á] [cÁ&|^æ||^Á•]^&ā-ā^åÁà^Á•`à { ācc^åÁ | [-ā }*Ë•^•c^{ { Á { æ} } ~æ&c`!^!c•Á åæææÁæ•Áæ}Áā}@^!^}A ~ `æļāc^Á [-Á c@^Á { æc^!āæ|Á~[!Ác@^Á æ]] | i&æcā[}Á ā} ååææc^åÈÁ Yæ!!æ}c^Á ā}&|`å^•Á*a^-Ac•Á •`&@Áæ•Á à|ā•c^!•ÈÁ !āâ*ā}*ĒÁæ}åÁ ^¢&^••āç^Á•`!~æ&ā}*Á|[••ÈÁ
- àÉÁ Ü^{[çæ]Áæ}åÁ!^]|æ&^{^}cÁ|[-Æå^&\Áà[æ!å•ÊÁàæ•^Á•@^^c•ÉÁc^{][!æ!^Á![[-Ðçæ][!Á

ÞUÜVP Y ÒÙVÒÜ ÞÁW ÞQX ÒÜÙQY	VΫÁ
ÚÜURÒÔVÁÞŒTÒÁ *********	
RUÓÁÀÁ´´´´´´Á	

ØUÜKÁ 1	,	,	•	•	,	,	,	•	•	Á	
QÙÙWÒ	Ö	ΚÁ	G	€	G	П	ÈF	ÉÁ			

- ÒÈÁ ØTÁÕ|[àæ|Á Šā•cā}*KÁ Ü[[-ā}*ÊÁ àæ•^Á -|æ•@ā}*•ÊÁ æ}åÁ &[{]][}^}cÁ {æc^!āæ|•Á •@æ|Á &[{]]^Á¸āc@Á
 '^~~ā¦^{^}c•Ái}ÁØTÁÕ|[àæ|ÁIIÍ€Á[!ÁØTÁÕ|[àæ|ÁIIÏ€Áæ•Á]æ!cÁ[-ÁæÁà~ājcĔ~]Á¦[[-ā}*Á•^•c^{ÊÁæ}åÁ•@æ|∣Á
 à^Á|ā•c^åÁi}ÁØTÁÕ|[àæ|A-ÄÄÜ[[-ÞæçÄÁ-[!ÁÔ]æ••ÁFÁ[!Á}[}&[{à~•cåA|A&[}•c¹~&cā]}ÉÁæ•Áæ]]|ā&æà|^EÁ
 Qå^}cā-^Á{æc^!āæ|•Á¸āc@ÁØTÁÕ|[àæ|Á{æ!\ā}*•ÈÁ
 - FÉÁ Øã!^ĐYã}å•c[¦{ÁÔ|æ••ã-ã&æcã[}KÁÁÔ|æ••ÁFŒĔJ€ÈÁ
 - GÈÁ Pæi[EÜ^•i•cæ] &^ÁÜæci} *KÁÁØ TÁÕ[[àæ|ÁÚ¦[]^\c^ÁŠ[••ÁÚ!^ç^}ci[] ÁÖæcæÁÙ@^^cÁFËH IÁÙPÈÁ
- ØĚÁ ÒÞÒÜÕŸÁ ÙVŒÜÁ Šã•cã} *KÁ Ü[[-ã} *Á •^•c^ { Á c[Á à^Á |ã•c^åÁ [] Á c@^Á ÖUÒC•Á ÒÞÒÜÕŸÁ ÙVŒÜÁ ÄÜ[[-Á Ú;[å~&c•ÁÛ~æ|ã-ã^âÁÚ;[å~&cÁŠī•cÄÁ-[!Á|[¸Ē•|[]^Á;[[-Á];[a~&c•ĚÁ
- $\tilde{O}^{\dot{A}} = \tilde{O}^{\dot{A}} \tilde{A} =
- PÉÁ Ù[|æ¦ÁÜ^-|^&cæ}&^AQ}å^¢KÁÞ[cÁ|^••Ác@æ}ÁÏÌÁ¸@^}Á&æ|&~|æc^åÁæ&&[¦åå}*Ác[ÁŒÙV⊤ÁÒÁFJÌ€ÉÁàæ•^åÁ[}Á
 c^•cá}*Áåå^}ci&æ|Á]¦[å~&c•Áà^ÁæÁ~*æ|á-ia^áAc^•cā}*Áæ*^}&^ÈÁ
- QĖÁ Ò¢c^¦ā[¦ÁØā¦^ËV^•cÁÒ¢][•ˇ¦^KÁŒÙVTÁÒÁF€ÌÁ[¦ÁWŠÁÏJ€ÊÁÔ|æ••ÁŒLÁ~[¦Áæ]]|ä&æcā[}Áæ}åÁ¦[[-Á•|[]^•Á
 á}åä&æc^åLÁc^•cā}*Áà^ÁæÁˇˇæ|ä-ā^åÁc^•cā}*Áæ*^}&^ÈÁQå^}cā-^Á]¦[åˇ&c•Á¸āc@Áæ]]¦[]¦äæc^Á{æ¦\ā}*•Á[-Á
 æ]]|ä&æà|^Ác^•cā}*Áæ*^}&^ÈÁ
- RÈÁ Øā!^ËÜ^•ā•cæ}&^ÁÜæcā}*•KÁÔ[{]|^Á¸āc@Á~ā!^Ë!^•ā•cæ}&^Ē!æc^åÁæ••^{à|^Áå^•ā*}•Áā}åå&æc^åĚÁQå^}cā-^Á]![å~&c•Á¸āc@Áæ]]![]!āæc^Á{æ!\ā}*•Á[-Áæ]]|i&æà|^Ác^•cā}*Aæ*^}&^E!

GÈHÁ ÚXÔÁÜUUØQÞÕÁ

- ŒĖÁ ÚXÔÁÙ@^^cKÁŒÙV TÁÖÁ I IHIÐÖÁ I IHI TĒÁV^] ^ÁQŪĒÁÕ ¡æå^ÁQĒÁ* |æ••Ē-āà^¦Á¦^ā}~ [;&^åĒÁ-^|cÁàæ& \^åĚÁ
 - FÈÁ $\frac{\text{Tæ}}{-\infty\&c^*!^!\bullet\text{K}}\dot{\Delta}^*$
 - æÈÁ Ùæ¦}æ-ã|ÁQ}&ÈLÁÙæ¦}æ-ā|ÁÕIF€ÈÁ
 - àÈÁ Øãà^¦Vāc^ÁæÁÙ^æ { æ}ÁÔ[¦][¦æcã[}ÈÁ
 - &ÈÁ Uc@^¦ÁTæ}~~æ&c~¦^!•Á{æ^Áà^Á&[}•āå^¦^åÁ~][}Á¦^çā^¸Á¸āc@ÁÞWÈÁ
 - GÈÁ V@ã&\}^••KÁÁÌ€Á {ã|•ÊÁ} [{ã}æ|ÈÁ
 - HÈÁ Ò¢][•^åÁØæ&^ÁÔ[|[¦KÁY@āc^ÈÁ
- GÈTÁ ŒWÝQŠQŒÜŸÁÜUUØQÞÕÁTŒVÒÜQŒŠÙÁ
 - $CE\dot{A} = \tilde{O}^{\alpha} \cdot \tilde{A} \cdot \tilde$

ÞUÜVP Y ÒÙVÒÜÞÁWÞQXÒÜÙQVŸ	Á
ÚÜURÒÔVÁÞŒTÒÁ	Á
RUÓÁÀÁ´´´´´Á	

ØUÜKÁ 1	,	,	•	•	,	,	,	,	•	Á
QÙÙWÒ	Ö	ΚÁ	G	€	G	П	ÈF	-Á		

GÈÏÁ ÜUUØÁQÞÙWŠŒVQUÞÁ

- ÓĖÁ Ú[|^ā•[&^æ} ~\aec^ÁÓ[æ\åÁQ}•~\æcā[}KÁŒÙVTÁÔÁFGÌJĒÁV^]^ÁQQĒÁÔ|æ••ÁFĒÁÕ\æå^ÁGĒÁ~^\cÁ[!Á*|æ••Ē-āà^\Á{\&cÅVTÁÔÁFGÌJĒÁV^]^ÁQQĒÁÔ|æ••ÁFĒĀÕ\æå^ÁGĒÁ~^\cÁ[!Á*|æ••Ē-āà^\Á{\&cÂ-æ&^\Á[}A\aecA-æ&^\Á]}

ÞUÜVP Y ÒÙVÒÜÞÁWÞQXÒÜÙQVŸ	ľΑ
ÚÜURÒÔVÁÞŒTÒÁ´´´´	Á
RUÓÁÀÁ´´´´´Á	

ØUÜKÁ′′′′Á QÙÙWÒÖKÁG€G1ÈFÁ

PUÜVP Y ÒÙV ÒÜ ÞÁW ÞQX ÒÜ ÙQV Š	ŻÁ
ÚÜURÒÔVÁÞŒTÒÁ	Á
RUÓÁÀÁ ´´´´´Á	

ØUÜKÁ ´	,	,	•	•	,	,	,	•	•	Á
QÙÙWÒ	Ö	ΚÁ	G	€	G	П	ÈF	Á		

- ÒÈÁ Viā { Á•`!~æ&^Á[~Áā}•`|æcā[}Á¸@^!^Á}^&^••æ!^AæcÁ![[~Áå!æā}•Á•[Á&[{]|^c^åÁ•`!~æ&^Áā•Á-|`•@Áæ}åÁå[^•Á }[cÁ!^•c!ā&cÁ-|[¸Á[~Á¸æc^!ÈÁ
- ØÈÁ 0} •cæ||ki} `|æci[] k¸ āc@h|[] * h [ā} c•h [~ki} `|æci[] ki} kæk&[] ci} ` [` •h•c!æi*@ch|i} ^h ¸āc@h^} å h [ā] c•h•cæ**^!^åh à^c¸^^} h [ā] c•h•cæ**^!^åh à^c¸^^} h [ā] c•h•cæ**^!^åh à^c¸^^} h [ā] c•h•cæ**^!^åh a *^•hà^c¸^^} h [ā] eh^cæh[i] h *æ] •h^cæh^cah a *^•hà * [a] eh^cæh^cah a *^•hà * [a] eh^cæh^cah a *^•hà * [a] eh^cæh^cah a * [a] eh^cæh
 - $\hat{O}^*(\hat{A}x) \triangleq \hat{A}^*(\hat{A}) + \hat{A}^*(\hat{A}) + \hat{A}^*(\hat{A}) = \hat{A}^*(\hat{A}) + \hat{A$
- ÕĖÁ Œå@^¦^åÁQ}•~|æα[}KÁQ}•œ||Á^æ&@Á|æ^^¦Á[~Áã}•~|æαi[}Áæ}åÁæå@^¦^Ác[Á•~à•c¦æc^Áæ•Á-[||[¸•KÁ
 - FÈÁ Ù^ch^æ&@h|æ^^!h[-hā} `|æcā[}hā}hæh`}ā.[! { h&[ç^!æ*^h[-h-`||Ē•]!^æåhā} `|æcā[}hæå@^•āç^Êh-ā! {|^h]!^••ā}*hæ}åh { æā}cæā}ā} *hā} • `|æcā[}hā}h]|æ&^Èh
- PÉÁ T^&@æ}ā&æ||^ÁØæ•c^}^åÅQ}•`|æcā[}KÁQ}•cæ||Á^æ&@Á|æ^^!Á[-Áā}•`|æcā[}Áæ}åÁ•^&`!^Ác[Áå^&\Á`•ā}*Á {^&@æ}ā&æ||^Á&@*c^}\-Á*a-ā*}^åÁæ}åÁ•ā:^åÁ~[!Á~æ•c^}ā}*Á•]^&ā-ā*^åÁà[æ!åĒc^]^Á![[-Áā}•`|æcā[]Ác[Áā^&\Ác^]^ĚÁ
 - FÈÁ Øæ•c^}Á i}• `|æci[}Á æ&&[¦åi}*Á c[Á ¦^``i¦^ {^}c•Á i}Á Ø TÁ Õ|[àæ|¢•Á ÄÜ[[~ÞæçÄÁ~[¦Á•]^&i-i^åÁ
 Yíàå•c[¦ {ÁÜ^•i•cæ}&^ÁÔ|æ••i-i&æci[}ÈÁ
- QÉÁ T^&@æ}ā&æ||^ÁØæ•c^}^åÁæ}åÁŒå@^!^åÁQ}•`|ææi[}KÁQ}•cæ||Á^æ&@Á|æ^^!Á[-Áā}•`|ææi[}Ác[Áå^&\Á`•ā}*Á
 {^&@æ}ā&æ|Á^æ•c^}^!•Á•]^&ā-ā&æ||^Áå^•ā*}^åÁæ}åÁ•ā:^åÁ~[!Á~æ•c^}ā}*Á•]^&ā-ā^åÁà[æ!åĒc^]^Á![[-Á
 ā}•`|æœi[}Ác[Áå^&\Ác^]^ĚÁ
 - FÈÁ Øæ•c^}Á-āi•cÁ|æ^^lÁ[-Áā}•`|æcā[}Áæ&&[låā}*Ác[Á!^~`āi^{^}c•Áā}ÁØTÁÕ|[àæ|¢•ÁÄÜ[[~ÞæçÄÁ~[lÁ •]^&ā-ā^åÁYā}å•c[!{ÁÜ^•ā•cæ}&^AÔ|æ••ā-ā&æcā[}ÈÁ
 - GÈÁ Ù^cA^æ&@A•~`à•^~``^}cA|æ^^!Á[~Aā}•`|æcā[}Áā}ÁæÁ`}ā~[!{A&[ç^!æ*^A[~A~`||Ē•]!^æåAā}•`|æcā[}Á
 æå@^•āç^ÈÁ-ā!{|^A]!^••ā}*Áæ}åÅ{æā}cæā}ā}*Áā}•`|æcā[}Áā}Á]æ&^ÈÁ
- RÈÁ 0} •cæ||Á&[ç^!Áà[æ¦å•Á[ç^!Áā}•`|æcā[}Á¸āc@Á|[}*Áb[ā}c•Áā}Á&[}cā}`[`•Á•c!æā*@cÁ|ā}^•Á¸āc@Á^}åÁb[ā}c•Á
 •cæ**^!^åÁà^c¸^^}Á![¸•ÈÁU--•^cÁb[ā}c•Á[-Áā}•`|æcā[}Áà^|[¸ÁæÁ{ā}ā{~{ÁîĀā}&@^•ÁÇFÍ€Á{{DÁā}Á
 ^æ&@Áåāi^&ca[}ÈÁŠ[[•^|^Áà`ccÁ&[ç^!Áà[æ¦å•Ác[*^c@^!Áæ}}áÁ-æ•c^}Ác[Á![[-Áå^&\ÈÁ
 - FÉÁ Øæ•c^}Á&[ç^!Áà[æ¦å•Áæ&&[¦åå}*Ác[Á¦^~~å!^{^}c•Áå}ÁØTÁÕ|[àæ|0•ÁÄÜ[[~ÞæçÄÁ~[!Á•]^&ā-ā^åÁ
 Yå}å•c[¦{ÁÜ^•ã•cæ}&^ÁÔ|æ••ã-ã&æci[}ÉÁ

HÈÏÁ ŒÖPÒÜÒÖÁÜUUØQÞÕÁQÞÙVŒŠŠŒVQUÞÁ

- - FÉÁ Q}•cæ||Á•@^^cÁæ&&[¦åã}*Ác[ÁŒÙVTÁÖÁÍ€HÎÈÁ
- ÓÈÁ Ùcæ¦cÁã}●cæ||æcã[}Á[-Á¦[[-â}*Áā]Á]!^●^}&^Á[-Á¦[[-â}*Á●^●c^ {Á{æ}`~æ&c`!^!0●Ác^&@}ã&æ|Á]^!●[}}^lÈÁ
- ÖÉÁ Ó[}åā}*ÁŒå@^•āç^KÁŒ]]|^Ác[Á•`à•c¦æc^Áæ}åÁ`}å^¦•ãå^Á[-Á¦[[-ā}*ÁæcÁ¦æc^Á¦^``ā¦^åÁà^Á {æ}`-æ&c`¦^ìÊÁ æ}åÁæ||[_Ác[Á]æ¦cāæ||^Áå¹^Áà^-[!^Áā}•cæ||ā}*Á¦[[-ā}*ÉÁÖ[Á}[cÁæ]]]^Ác[Á•]]i&^Áæ¦^æÁ[-Á¦[[-ā}*ÉÁ

ÞUÜVP Y ÒÙVÒÜÞÁWÞQXÒÜÙQV	ŻÁ
ÚÜURÒÔVÁÞŒTÒÁ	Á
RUÓÁÀÁ ´´´´´Á	

ØUÜKÁ 1	,	•	,	•	,	,	,	,	•	Á
QÙÙWÒ	Ö	ΚÁ	G	€	G	П	ÈF	-Á		

- ÒÈÁ Q}Áæååācā[}Ác[Áæå@^!ā}*ÉÁ {^&@æ}ā&æ||^Á~æ•c^}Á![[-ā}*Á•^&`!^|^ÁæcÁc^! {ā}æcā[}•ÉÁ]^}^c!æcā[}•ÉÁæ}åÁ]^!ā {^c^!Á[-Á![[-ā}*ÉÁ
- ØÈÁ Œ]]|^Á¦[[-ā} *Á¸āc@Á•ãå^Á|æ]•Á•@ā} *|^åÁ¸āc@Á•|[]^Á[-Á¦[[-Áå^&\Á¸@^¦^Á][••āà|^ÈÁ
- ÕĖÁ Ù^æ { •KÁÔ|^æ}Á•^æ { Áæ¦^æ•ĒÁ [ç^||æ]Á¦ [[-ā} *ĒÁæ} åÁ@ [cĒæā!Á¸^|åÁ•āâ^Áæ}åÁ^}åÁ|æ]•Á [-Á! [[-ā} *Áæ}åÁ
 •@^^cÁ~|æ•@ā} *•Áæ&& [¦åā} *Ác [Å {æ} ~æ&c '|^!ĉ•Á¸ ¦ācc^}Áā}•c| ~&cā[}•ĒÁc [Å^}• '!^ÁæÁ¸æc^\cā*@cÁ•^æ {Á
 ā}•cæ||æcā[}ĒÁ
 - FÉÁ V^•cÁ|æ]Á^å*^•Á¸ãc@Á]¦[à^Ác[Áç^¦ã-•^æ{Á¸^|åÁ&[}cã} ~ãc^ÈÁŒ]]|^Á|æ]Á•^æ|æ}cÁc[Á•^æ|Á&~cÁ ^å*^•Á[-Á•@^^cÈÁ
 - GÉÁ X^|\dangle^A-\dangle^A\dangle^C|\dangle^* * c@A|-\dangle^* * c@A|-\dangle^* * \dangle A\dangle^* \dangle A\dangle A\dangle^* \dangle A\dangle A\dangle^* \dangle - HÈÁ Ü^]æilAc^æ!•ÊAç[iå•ÊAæ}åA|æ]]^åA•^æ{•Ai}A![[-ā}*Ac@æcÅå[A}[cA&[{]|^A¸āc@A!^~~ã!^{^}c•ÈA

HÈÌÁ TÒÔPŒÞQÔŒŠŠŸÁØŒÙVÒÞÒÖÁÜUUØQÞÕÁQÞÙVŒŠŠŒVQUÞÁ

- CEÁ T^&@æ}ā&æ||^Á ~æ•c^}Á :[[-ā}*Á [ç^!Á æ!^æÁ c[Á !^&^āç^Á :[[-ā}*Á æ&&[!åā}*Á c[Á :[[-ā}*Á •^•c^{Á {æ}`~æ&c`!^!c•Á;!ācc^}Áā}•c!~&ci[}*ÉW}:[]Á![[-ā}*Áæ}åÁæ||[,Ác[Á!^|æ¢Áà^-[!^Á!^cœā}á}*ÈÁ
 - FÈÁ Q} •cæ||Á•@^^cÁæ&&[¦åã}*Ác[ÁŒÙV TÁÖÁÍ€Ì GÈÁ
- ÓÉÁ Ùcæichá} •cæ||æcá[}Á[-Á¦[[-á}*Áá}Á]¦^•^}&^Á[-Á¦[[-á]*Á•^•c^{ {Á {æ}`~æ&c`¦^;0•Ác^&@}á&æ|A]^¦•[}}^|ÉÁ
- ÖÉÁ T^&@æ}å&æ||^Á~æ•c^}Á[!Áæå@^!^Á![[~á}*Á•^&`!^|^ÁæcÁc^!{á}æcá[}•ÉÁ]^}^c!æcá[}•ÉÁæ}åÁ]^!á{^c^!Á[~Á ![[-á}*ÉÁ
- ÒÈÁ Œ]]|^Á¦[[-ā}*Á¸āc@Á•āå^Á|æ]•Á•@ā}*|^åÁ¸āc@Á•|[]^Á[-Á¦[[-Áå^&\Á¸@^¦^Á][••āà|^ÈÁ
- ØÈÀ Q}ËÙ^æ{ÁŒccæ&@{^}cKÁÙ^&`¦^Á[}^A^å*^Á[-ÁÚXÔÁ•@^^cÁ`•ā}*Á-æ•c^}ā}*Á]|æc^•Á[!Á{^cæ|Áàæcc^}•Á &^}c^!^åÁ¸āc@ā}Á•^æ{ÉÁæ}åÁ{^&@æ}ā&æ||^Á-æ•c^}ÁÚXÔÁ•@^^cÁc[Á![[-Áå^&\ÈÁ
- ÕĚÁ Ù^æ {•KÁÔ|^æ}Á•^æ {Áæ¦^æ•ĚÁ[ç^!|æ]Á![[-ā}*ĚÁæ}åÁ@[cĒæāiÁ¸^|åÁ•āå^Áæ}åÁ^}åÁ|æ]•Á[-Á![[-ā}*Áæ}åÁ
 •@^^cÁ-|æ•@ā}*•Áæ&&[¦åá}*Ác[Á {æ}`~æ&c`¦^!0•Á¸¦āc^}Áā}•c¦`&cā[}•Ác[Á^}•`!^ÁæÁ¸æc^!cā*@cÁ•^æ{Á
 ā}•cæ||æcā[}ĚÁ
 - FÈÁ V^•cÁ|æ]Á^å*^•Á¸ãœÁ]¦[à^Ác[Áç^¦ã-•^æ{Á¸^|åÁ&[}cã} ĭāc^ÈÁŒ]]|^Á|æ]Á•^æ|æ}cÁc[Á•^æ|Á&`cÁ-^å*^•Á[-Á•@^^cÈÁ
 - GÈÁ X^¦à~^A-à^|åA•c!^} *c@Á[-Á•^æ{•ÁæÁ{à}à{``{Á[-Ác]à&^Áåæi]^ÈÁæ}åÁ!^]æā!Å•^æ{Å•æ{]]^Áæ!^æ•ÈÁ
 - HÉÀ Ü^]æā!Ác^æ!•ÉÁç[āå•ÉÁæ}åÁ|æ]]^åÁ•^æ{•Áā}Á![[~ā}*Ác@æcÅå[Á}[cÁ&[{]|^Á¸āc@Á!^~~ã!^{^}c•ÉÁ
- PÈÁ Ù]'^æåh•^æ|æ}chà^åh[ç^';hå^&\Eå!æi}h-|æ}*^hæch![[-hå!æi}•Êhæ}åh•^&`;^|^h•^æ|h![[-i]*hi]|æ&^h]iæ&^h

HÈJÁ ÓŒÙÒÁØŠŒÙPQÞÕÁQÞÙVŒŠŠŒVQUÞÁ

CEÁ Q}•cæ||Á•@^^cÁ-|æ•@ā} *•Áæ}åÁ]!^~[¦{^åÁ-|æ•@ā}*Áæ&&^••[¦ā^•ÉÁæ}åÁæå@^!^Ác[Á•ˇà•clæc^•Áæ&&[¦åā}*Ác[Á•ˇà•clæc^•Áæ&&[¦åā}*Ác[Á•ˇà•clæc^•Áæ&&[¦åā}*Áca[}•ÉÁæ}åÁæå@^!^Ác[Á•ˇà•clæc^•Áæ&&[jåā}*Áca[}•ÉÁæ}åÁæå@^!^Ác[Á•ˇà•clæc^•Áæ&&[jåā}*Áca[j•ÉÁ

ÞUÜVP Y ÒÙVÒÜÞÁWÞQXÒÜÙQV	Ϋ́Á
ÚÜURÒÔVÁÞŒTÒÁ´´´´	Á
RUÓÁÀÁ ´´´´´Á	

ØUÜKÁ 1	•	•	•	•	•	•	•	•	•	Á
QÙÙWÒ	Ö	ΚÁ	G	€	G	П	ÈF	-Á		

- ÖÉÁ Øã}æ|ÁÜ[[-ÁQ}•]^&cā[}KÁŒ:|æ}*^Á~[!Á![[-ã}*Á•^•c^{ { Á { æ} }~æ&c~!^!(•Ác^&@}ã&æ|Á]^!•[}}^|Ác[Áã}•]^&cÁ ![[-ā}*Áā}•cæ||æcā[]Á[] Á&[{]|^cā[}ĚÁ

HÈFGÁ ÚÜUVÒÔVQÞÕÁŒÞÖÁÔŠÒŒÞQÞÕÁ

ÞUÜVP Y ÒÙVÒÜÞÁWÞQXÒÜÙQVŸ	Á
ÚÜURÒÔVÁÞŒTÒÁ´´´´	Á
RUÓÁÀÁ ´´´´´Á	

ØUÜKÁ * * * * * * * * * * * * * * * * * * *	,	,	Á
ÙÙWÒÖKÁG€G IÈF	Á		

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D5;9'=BH9BH=CB5@@M'@9:H'6@5B?'