JC>I:9 HI6I:H H:8JG>I>:H 6C9 :M8=6C<: 8DB B>HH>DC

L QcXY^Wd_^' 9)8) -+0/4

РРРРРРРРРРРРРРРРРРРРРРРРРРРРРРРРРРРРР

;**DGB**,+(**F**

РРРРРРРРРРРРРРРРРРРРРРРРРРРРРРРРРРРРРР

\$BQb[D^U%

FJ6GI:GANG:EDGIEJGHJ6CIIDH:81>DC,.DG,0%T%D;I=:H:8JG>I>:H:M8=6C<:68ID;,4./

;_b dXU aeQbdUb\i `UbY_T U^TUT 9USU] RUb .,' -+-,

_b

IG6CH>I>DC G:EDGI EJGHJ6CI ID H: 8 I>DC ,. DG ,0%T% D; I = : H: 8 JG>I>:H :M8=6C<: 68 I D; ,4./

C:LH8DGEDG6I>DC

9U\0g0bU

\$HdQdU _b _dXUb ZebYcTYSdY_^ _V Y^S_b`_bQdY_^ _b _bWQ^YjQdY_^%

/1(-40+42+

(G)H :] $\ \ Ub > TU^dYYSQdY_ C_)$

,++.1 \$OY` 8_TU%

,-,, 6 fU^eU_V dXU 6] Ub/SQc' CUg N_b[' CUg N_b[\$6 TTbUcc_V` bY^SY` Q\ UbUSed'fU_VY/SUc%

\$-,-%/,1(./++

\$GUWYcdbQ^dlc dU\U`X_^U ^e] RUb' Y^S\eTY^W QbUQ S_TU%

HUSebYdYUc bUWYcdUbUT `ebceQ^d d_ HUSdY_^ , -\$R% _V dXU 6Sd5

I Vd\U_V UQSX S\Qcc	I bQTY^W <u>Hi]R_\\$c%</u>	CQ] U _V UQSX UhSXQ^WU _^ gXISX bUWYedUbUT
9\Qcc 7 9_]]_^ Id_S['`Qb fQ\eU !+)+, `Ub cXQbU	DMI7	J XU DQcTQa = RQ IU USd CQb[Ud
9\Qcc 8 9_]]_^ Id_S['`Qb fQ\eU !+)+, `Ub cXQbU	DMI	$JXU \ DQcTQa = \ RQ\ IU\USd \ CQb[Ud$

?^TYSQdU Ri SXUS[]Qb[gXUdXUb dXU bUWYcdbQ^d5 \$, % XQc V\\UT Q\\ bU`_bdc bUaeYbUT d_ RU V\\UT Ri IUSdY_^ , _ b ,0\$T%_V dXU IUSebYdYUC ; hSXQ^WU 7Sd_V ,4./ TebY^W dXU `bUSUTY^W ,-]_^dXc \$_b V_b ceSX cX_bdUb `UbY_T dXQd dXU bUWYcdbQ^d gQc bUaeYbUT d_ V\\U ceSX bU`_bdc%' Q^T \$-% XQc RUU^ ceRZUSd d_ ceSX V\\Y^W bUaeYbU]U^dc V_b dXU `Qcd 4+ TQic) OUc D_

 $\label{eq:stars} $$ $$ P_{J} = P_{J}$

 $\label{eq:started_st$

BQbWU QSSU\UbQdUT VY\Ub

D_^(QSSU\UbQdUT VY\Ub

7 SSU\UbQdUT VY\Ub

I] Q\\Ub bU`_bdY^W S_] `Q^i

;] UbWY^W Wb_gdX S_]`Q^i

?V Q^ U] UbWY^W Wb_gdX S_] `Q^i' Y^TYSQdU Ri SXUS[] Qb[YV dXU bUWYcdbQ^d XQc U\USdUT ^_d d_ ecu dXU UhdU^TUT dbQ^cYdY_^ `UbY_T V_b S_] `\iY^W gYdX Q^i ^Ug _b bUfYcUT YY^Q^SYQ\ QSS_e^dY^W cdQ^TQbTc `b_fYTUT `ebceQ^d d_ IUSdY_^ , .\$Q% _V dXU ; hSXQ^WU 7 Sd)

;DGB,+(F I67A:D;8DCI:CIH

FQWU

FQbd ?) <y^q^syq\ ?^v_b=""]="" qdy_^<="" th=""><th></th></y^q^syq\>	
?dU] ,) <y^q^syq\ idqdu]="" td="" u^dc<=""><td></td></y^q^syq\>	
9_^c_\YTQdUT I dQdU] U^dc _V E`UbQdY_^c V_b dXU dXbUU Q^T cYh] _^dXc U^TUT : USU] RUb . ,' -+- , Q^T -+-+ \$e^QeTYdUT%	-
9_^c_\YTQdUT I dQdU] U^dc _V 9_] `bUXU^cYfU ?^S_] U V_b dXU dXbUU Q^T cYh] _^dXc U^TUT : USU] RUb .,' -+-, Q^T -+-+ \$e^QeTYdUT%	
9_^c_\YTQdUT 8Q\Q^SU IXUUdc Qc _V : USU] RUb . ,' -+- ,	/
9_^c_\YTQdUT I dQdU] U^dc _V 9QcX <_gc V_b dXU cYh] _^dXc U^TUT : USU] RUb . ,' -+- , Q^T -+-+ \$e^QeTYdUT%	C
D_dUc d_ dXU K^QeTYdUT 9_^c_\YTQdUT <y^q^syq\]="" idqdu="" td="" u^dc<=""><td>1</td></y^q^syq\>	1
?dU] -) CQ^QWU]U^drc : YcSeccY_^Q^T 7^Q\icYc _V <y^q^syq\ 9_^tydy_^="" _v="" e`ubqdy_^c<="" huce\dc="" q^t="" td=""><td>-2</td></y^q^syq\>	-2
?dU] .) GeQ^dYdQdYfU Q^T GeQ\YdQdYfU : YcS_cebUc 7R_ed CQb[Ud HYc[/0
?dU] /) 9_^db_\c Q^T Fb_SUTebUc	/0
FQbd ??) EdXUb ?^V_b] QdY_^	
?dU],)BUWQ\Fb_SUUTY^Wc	/1
?dU], 7) HYc[<qsd_bc< td=""><td>/1</td></qsd_bc<>	/1
?dU] -) K^bUWYcdUbUT IQ\Uc_V; aeYdi IUSebYdYUc Q^T KcU_V Fb_SUUTc	/2
?dU].):UVQe\dc K`_^ IU^Y_b IUSebYdYUc	/2
?dU] /) CY^U IQVUdi : YcS_cebUc	/2
?dU] O) EdXUb ?^V_b] QdY_^	/2
?dU] 1) ; hXYRYdc	/3
I YW^QdebU	/4

C:LH8DGEDG6I>DC

8DCHDA>96I:9HI6I:B:CIHD;8DBEG:=:CH>K:>C8DB:

\$K^QeTYdUT6] Y\\Y_^c%

	;_b d	XU dXbUU 9 USU] F] _^dXc U^TUT RUb . ,'	;_b dXU clh] _^dXc U^TUT 9USU] RUb . ,'		
		·+ - ,	•+•+	-+-,	-+-+	
DUd Y^S_] U	!	-1-	! -1,	! 0-4	! .+3	
EdXUb S_]`bUXU^cYfU \$_cc% Y^S_] U5						
<_bUYW^ SebbU^Si dbQ^c\QdY_^ QTZecd] U^dc		\$.1%	.,0	\$-++%	/	
DUd SXQ^WU Y^ dXU VQYb fQ\eU _V SQcX V_g XUTWUc ^{sqv}		,	0	-	\$ - %	
8 U^UVYd `\Q^ QTZecd] U^dc' ^Ud ^{8R%}		2	\$2%	, -	,	
EdXUb S_]`bUXU^c\fU \$_cc% \^S_] U		\$-3%	.+3	\$,31%	/-,	
9_]`bUXU^cYfU Y^S_]U		/	014	./.	2-4	
BUcc5 DUd Y^S_] U QddbYRedQR\U d_ ^_^S_db_\\Y^W Y^dUbUcdc		\$-2%	\$.+%	\$43%	\$/.%	
BUcc5 EdXUb S_]`bUXU^cYfU \$Y^S_]U% _cc QddbYRedQR\U d_ ^_^S_^db_\\Y^W Y^dUbUcdc ^{\$S%}		0	\$1.%	.3	\$3+%	
9_] `bUXU^cYfU Y^S_] U Qddb YRedQR\U d_ DUgc 9_b`_bQdY_^ cd_S[X_\TUbc	!	-+2	! /21	! -3.	! 1+1	

\$Q% DUd _V Y^S_] U dQh Uh`U^cU _V !,] Y\\Y_^ Q^T ^Y\ V_b R_dX dXU dXbUU Q^T cYh] _^dXc U^TUT : USU] RUb .,' -+-, Q^T -+-+' bUc`USdYfU\i)

\$R% DUd _V Y^S_] U dQh Uh`U^cU \$RU^UVYd% _V !-] Y\\Y_^ Q^T \$!.%] Y\\Y_^ V_b dXU dXbUU] _^dXc U^TUT : USU] RUb .,' -+-, Q^T -+-+' bUc`USdYfU\i' Q^T Y^S_] U dQh Uh`U^cU _V !/] Y\\Y_^ Q^T ^Y\ V_b dXU cYh] _^dXc U^TUT : USU] RUb .,' -+-, Q^T -+-+' bUc`USdYfU\i)

\$S% FbY] QbY\i S_^cYcdc _V V_bUYW^ SebbU^Si dbQ^c\QdY_^ QTZecd] U^d)

JXU QSS_]`Q^iY^W ^_dUc QbU Q^ Y^dUWbQ\`Qbd _V dXUcU e^QeTYdUT S_^c_\YTQdUT VY^Q^SYQ\ cdQdU] U^dc)

C:LH 8DGEDG6I>DC

C:LH8DGEDG6I>DC

8DCHDA>96I:9HI6I:B:CIHD; 86H=;ADLH $K^QeTYdUT6$] Y/Y^c %

		; _b dXU c'lh] _ 9 USU] RI	
	D_dUc	·+·,	-+-+
D`UbQdY^W QSdYfYdYUc5			
DUd Y^S_] U	!	0-4	! .+3
7 TZecd] U^dc d_ bUS_^SY\U ^Ud Y^S_] U d_ ^Ud SQcX `b_fYTUT R i _`UbQdY^W QSdYfYdYUc5			
: U`bUSYQdY_^ Q^T Q] _bdYjQdY_^			,
E`UbQdY^W \UQcU Uh`U^cU		1/	1/
; aeYdi _ccUc _V QVVY\YQdUc	0	1	/
9QcX TYcdbYRedY_^c bUSUYfUT Vb_] QVVY\YQdUc		2	2
EdXUb' ^Ud	,.	\$,.+%	\$2,%
: UVUbbUT Y^S_] U dQhUc Q^T dQhUc `QiQR\U	,,	24	-,
9XQ^WU Y^ _`UbQdY^W QccUdc Q^T \YQRY\YdYUc' ^Ud _V QSaeYcYdY \YUc			

CDI: ,) 9:H8G>EI>DCD; 7JH>C:HH 6C9 76H>HD; EG:H:CI6I>DC

*>0F0 KC 7NB0BJP>PFKJ

 $JXU \ QSS_] \ (a^iy^W \ e^QeTYdUT \ S_c_{TQdUT \ VY^Q^SYQ(cdQdU \ U^dc \ V \ dXU \ 9_] \ (a^i' \ gXYSX \ QbU \ bUVUbbUT \ d_XUbUY^Qc \ dXU \ p9_^c_{TQdUT \ <Y^Q^SYQ(IdQdU \ U^dc' \ QXGT \ VY^QCS_bTQ^SU \ gYdX \ WU^UbQ() \ i \ QSS_e^dY^W \ bY^SY^Uc \ Y^dXU \ VY^QSY_Uc \ Y^dXU \ VY^QSY_Uc \ Y^dXU \ Y^QSY_Uc \ Y^dXU \ YY^QSY_Uc \ YY^QSY_UC \ YY^QSY_UC \ YY^QSY_UC \ YY^ZU \ YY^QSY_UC \ YY^ZU \ YY^QSY_UC \$

C: LH 8DGEDG6I>DC CDI:HIDI=: JC6J9>I:9 8DCHDA>96I:9 ;>C6C8>6A HI6I:B:CIH

CDI: -)G:K:CJ:H

JXU V__gY^W dQR\Uc `bUcU^d dXU 9_] `Q^irc TYcQWWbUWQdUT bUfU^eUc Ri di`U Q^T cUW] U^d V_b dXU dXbUU Q^T cYh] _^dXc U^TUT : USU] RUb ., ' -+-, Q^T -+-+5

			;_b dXU dXbUU]	_^dXc U^TUT 9U	SU]RUb.,'-+-,		
	9 YWYdQ\ GUQ\ : cdQdU HUbfYSUc	HeRcSby`dy_^ KyTU_ HUbfySUc	9_g ?_^Uc	7 <u>[</u> EeR\YcXY^W	CUgc BUTIQ	DdXUb	I_dQ\ GUfU^eUc
				\$Y^] Y\\Y_^c%			
HUfU^eUc5						_	
9 YbSe\QdY_^ Q^T ceRcSbY`dY_^	! .	! /	! .01	! 0		! 0	! ,'+2-
7TfUbdYcY^W		00	,/,	0	-4+	0	0,4
9_^ce]Ub	0	0	0	04/	0	0	04/
HUQ\ UcdQdU	.0-	0	0	0	0	0	.0-
EdXUb	13	,+	,,		13	0	,3+
J_dQ\ HUfU^eUc	! /01	! /43	! 0+3	! 1,2	! 1.3	! 0	! -'2,2
			;_b dXU dXbUU]	_^dXc U^TUT 9U	SU]RUb.,'-+-+		
	9 YWYdQ\ GUQ\ : cdQdU HUbfYSUc	HeRcSbY`dY_^ KYTU_ HUbfYSUc	9_g ?_^Uc	7[EeR\YcXY^W	CUgc BUTYQ	DdXUb	I_dQ\ GUfU^eUc
				\$Y^] Y\\Y_^c%			
HUfU^eUc5							
9 YbSe\QdY_^ Q^T ceRcSbY`dY_^	! 3	! //1	!.,4	! 0	! -02	! 0	! ,'+.+
7TfUbdYcY^W	.+	00	, ,0	0	-/3	0	//3
9_^ce]Ub	0	0	0	0	0	0	0
HUQ\ UcdQdU	-3,	0	0	0	0	0	-3,
EdXUb	-+	,+	, -	- ,	13	,	,
$J_dQ HUfU^eUc$!4	! 0,,	! //1	! 0//	! 02.	!,	! -'/,/
			;_b dXU cYh]	_^dXc U^TUT 91	USU] RUb . ,' -+- ,	,	
	9 YWYdQ\ GUQ\ : cdQdU HUbfYSUc	HeRcSby`dy_' KyTU_ HUbfySUc	9_g ?_^Uc	7[EeR\\[cX\]^W		DdXUb	I_dQ\ GUfU^eUc
				\$Y^] Y\\Y_^c	ĥ		
HUfU^eUc5							
9 YbSe\QdY_^ Q^T ceRcSbY`dY_^	! 1		! 2+0) ! o		! 0	! -',/4
7TfUbdYcY^W	11	,,/	,	0		0	4-/
9_^ce]Ub	0	0	0	,',,3	в о	0	,',,3
HUQ\ UcdQdU	12-		0	0	0	0	12-
EdXUb	,.3	-,	,1			0	.01
J_dQ\ HUfU^eUc	! 33-	! ,'++3	! 40-	! ,',1.	! ,'- , /	<u>!</u> 0	! 0'-,4

	;_b dXU clh] _^dXc U^TUT 9 USU] RUb . ,' -+-+												
	9 YWYdQ\ GU : cdQdU HUbfYSUc		HeRcSbY`dY_^ KYTU_ HUbfYSUc	9_1	g ?_^Uc		7[R\YcXY^W	CUg	e B UTYQ		DdXUb	G	I_dQ\ UfU^eUc
						\$Y^] Y\\Y_^c%						
HUfU^eUc5													
9 YbSe\QdY_^ Q^T ceRcSbY`dY_^	!,	1	! 33.	!	1.+	!	0	!	0+.	!	0	!	-'+
7TfUbdYcY^W	()3	,+0		,30		0		/		0		23+
9_^ce]Ub		0	0		0		41/		0		0		41/
HUQ\ UcdQdU	0,	1	0		0		0		0		0		0,1
EdXUb		4	,4		,2		.3		, -0		,		4
J_dQ\ HUfU^eUc	! 1-	4	! ,'++2	!	3	!	, '++-	!	,'+1+	!	,	!	/'0.,

8_^dbQSd \YQRY\YdYUc Q^T QccUdc

JXU 9_] `Q^irc TUVUbbUT bUfU^eU RQ\Q^SU `bY] QbY\i bU\QdUc d_ Q] _e^dc bUSUYfUT Vb_] Secd_] Ubc V_b ceRcSbY`dY_c `QYT Y^ QTfQ^SU _V dXU cUbfYSUc RUY^W `b_fYTUT) JXU V__g Y^W dQR\U `bUcU^dc SXQ^WUc Y^ dXU TUVUbbUT bUfU^eU RQ\Q^SU V_b dXU dXbUU Q^T cYh] _^dXc U^TUT : USU] RUb ., ' -+-, $Q^T -+-+5$

	;_	;_b dXU dXbUU]_^dXc U^TUT 9USU] RUb .,'			; _b dXU cih] _^dXc U^ 9USU] RUb . , '			
		-+-,	-+-+		-+-,			•+•+
		\$Y^] Y				`c%		
8Q\Q^SU' RUWY^^Y^W _V `UbY_T	!	/12	!	/+4	!	/2.	!	.43
:UVUbbQ_V bUfU^eU		304		200		,'12/		,'/1-
HUS_W^YdY_^ _V TUVUbbUT bUfU^eU ^{\$Q%}		\$31/%		\$224%		\$,'123%		\$,'/3+%
EdXUb		0		,0		\$2%		-+
8 Q\Q^SU' U^T _V `Uby_T	!	/1-	!	/++	!	/1-	!	/++

\$Q% <_b dXU dXbUU Q^T cYh] _^dKc U%GUT : USU] RUb .,' -+-,' dXU %/jUT Q^i bUS_W^YjUT !,3-] Y\\Y_^ Q^T !.2-] Y\\Y_^J bUb HISAY BNH' EVAU EUYEH @X\SX @Qd Y^S\\HTYTH @XX_HU^Z^KTU/FbKUT ZUDU%EU R(@QFSU(¥)(H))1(^)(CH)1(^)(CD)1 (O)128BT : USU] RUb .,' -+-+' dXU 9_] `Q^i bUS_W^YjUT !

CDI: .) 68FJ>H>I>DCH

8T\KYZUXbY 1[Y0TKYY 3GOR_

?^ CQi -+-,'dXU 9_]`Q^i QSaeYbUT ?^fUcd_brc 8ecY^Ucc : QY\i \$p?8 : q% V_b

OMXKKSKTZZUGIW[0XK =>8A

;_b dXU c/h]_^dXc U^TUT 9USU] RUb . ,'											
		-	·+-,			-+-+					
U] dUb]	`_iŪU Y^QdY_^	DdX	Ub S_cdc			U] dUb] RU	`_i`UU Y^QdY_^ ^UVYdc	DdXUb S	_cdc		I_dQ\
!	0,	!	.0	!	31	!	1/	!	4	!	2.
	.2		3		/0		.0		-3		1.
	\$10%		\$2%		\$2-%		\$14%		\$.%		\$2-%
	0		0		0		-		0		-
!		!	.1	!	04	!		!	./	!	11
	U] dUb]	.2 \$10% o	$ \begin{array}{c c} D^{U} dY & JU \\ U & J^{L} UU \\ dUb & J^{A}QdI_{A} \\ RU^{A}UVide & DdX \\ \end{array} $ $ \begin{array}{c} 1 \\ 0, & ! \\ .2 \\ $10\% \\ 0 \\ \end{array} $	-+-, D^Ud']U U]`_iUU dUb]Y^QdI_^ RU^UVVdc DdXUb S_cdc ! 0, ! .0 .2 3 \$10% \$2% 0 0	-+-, D^U d'] U U] `_iUU dUb] Y^Qd'_^ RU^UWdc DdXUb S_cdc ! 0, ! .0 ! .2 3 \$10% \$2% 0 0	-+-, D^U dĭ] U U <td>$\begin{array}{c c c c c c c c c c c c c c c c c c c$</td> <td>$\begin{array}{c c c c c c c c c c c c c c c c c c c$</td> <td>D^U dl'] U J^U dl'] U D^U dl'] U J'L i UU dUb] '^L i UU dUb] '^L i UU dUb] '^L i UU dUb] '^L i UU dUb] '^L i UU DdXUb S_cdc I_dQ\ RU^UVVide DdXUb S ! 0, ! .0 ! 31 ! 1/ ! .2 3 /0 .0 \$10% \$2% \$2-% \$14% 0 0 0 - - - -</td> <td>$\begin{array}{c c c c c c c c c c c c c c c c c c c$</td> <td>-+-, -+-, D^U dĭ] U U] `iUU U] `iUU dUb] Y^Qdī_^ DdXUb S_cdc I_dQ\ RU^UVVdc DdXUb S_cdc I_dQ\ RU^UVVdc DdXUb S_cdc ! 0, ! .0 ! 31 ! 1/ ! 4 ! .2 3 /0 .0 -3 \$10% \$2% \$2-% \$14% \$.% 0 0 0 - 0 .0 - 0</td>	$\begin{array}{c c c c c c c c c c c c c c c c c c c $	$\begin{array}{c c c c c c c c c c c c c c c c c c c $	D^U dl'] U J^U dl'] U D^U dl'] U J'L i UU dUb] '^L i UU dUb] '^L i UU dUb] '^L i UU dUb] '^L i UU dUb] '^L i UU DdXUb S_cdc I_dQ\ RU^UVVide DdXUb S ! 0, ! .0 ! 31 ! 1/ ! .2 3 /0 .0 \$10% \$2% \$2-% \$14% 0 0 0 - - - -	$\begin{array}{c c c c c c c c c c c c c c c c c c c $	-+-, -+-, D^U dĭ] U U] `iUU U] `iUU dUb] Y^Qdī_^ DdXUb S_cdc I_dQ\ RU^UVVdc DdXUb S_cdc I_dQ\ RU^UVVdc DdXUb S_cdc ! 0, ! .0 ! 31 ! 1/ ! 4 ! .2 3 /0 .0 -3 \$10% \$2% \$2-% \$14% \$.% 0 0 0 - 0 .0 - 0

7 c _V : USU] RUb . ,' -+- ,' bUcdbeSdebY^W \YQRY\YdYUc _V Q``b_hY] QdU\i !. ,] Y\\Y_^ gUbU Y^S\eTUT Y^ dXU 8Q\Q^SU IXUUd Y^ EdXUb SebbU^d \YQRY\YdYUc Q^T !-3] Y\\Y_^ gUbU Y^S\eTUT Y^ EdXUb ^_(SebbU^d \YQRY\YdYUc)

CDI: 0) >**CK: HIB: CIH**

/

JXU 9] `Q^irc Y^fUcd] U^dc gUbU S] `bYcUT _V dXU V__gY^W5

		D g ^UbcXI` EUbSU^dQWU Qc _V 9 USU] RUb .,' -+- ,	6c_V 9USU] RUb.,'-+-, \$1^]	6c_V ?e^U .+' -+-,
;		fQbY_ec	! -,0	! 2,
; aeYdi cUSebYdYUc ^{\$R%}		fQbY_ec	-4+	-3+
<u>J_d@@\</u> ?\$^fUcd_]U%Uc_c	Y	V B	! _] 0+0 Y	!^j.0,`

\$Q% : ebY^W dXU cYh] _^dXc U^TUT : USU] RUb ., ' -+- , ' H; 7 =b_e` QSaeYbUT Q^ ,3 " Y^dUbUcd \$,1)1 " _^ Q TY\edUT RQcYc% Y^
Fb_`Ubdi = ebe FdU) BdT) \$pFb_`Ubdi = ebeq%' Q \UQTY^W TYWYdQ\ `b_`Ubdi dUSX^__Wi S_] `Q^i _`UbQdY^W] Qb[Ud`\QSUc Y^
I_edXUQcd 7 cYQ' Y^ UhSXQ^WU V_b Q\\ cXQbUc _V H; 7 =b_e`rc U^dU^dU^d Y^W F % ' e` c U ^ d U

$CDI: 1) \ 7DGGDL>C<H$

JXU 9] `Q^irc d_dQ\ R_bb_gY^Wc S_^cYcd _V dXU V__gY^W5

	>^dUbUcd bQdU Qd B Qdebidi Qd 9USU] RUb . ,' 9USU] RUb . ,' -+- , -+- , 9		6 c _V 9 USU] RUb . ,' -+- ,	6c_V ?e^U.+'-+-,
			\$Y^] Y\\Y_^	
CUgc 8_b`_bQdY_^				
-+-, IU^Y_b ^_dUc	.)320 "	CQi ,0' -+-4	! 431	! 430
<u>; hdU\ <b_e`<sup>§0%</b_e`<sup></u>				
-+,4 9bUTYd VQSY\Yd i^{SR}	-).1 "	CQi .,'-+-/	-,2	
-+,4 JUb] _Q^ VQSY\Ydi	1)-0 "	D_f' -+-/	,3,	,4+
-+,2 M_b[Y^W SQ`YdQ\ VQSY\Yd i^{R}	-).1 "	CQi .,'-+-/	0	0
$J U \subset dbQ < QSY \forall i$	2)3. "	:US' -+-2	24	1+
-+,- KI `bYfQdU `\QSU]U^d o KI: `_bdY_^ o dbQ^SXU - ^{\$\$%}	/)-2 "	@e\ -0' -+	-+.	-+-
-+,-KI`bYfQdU`\QSU]U^d oKI:`_bdY_^ o dbQ^SXU. ^{\$\$%}	/)/- "	@e\ -0' -+-/	,0-	,0-
-+,- KI `byfQdU `\QSU]U^d o 7K: `_bdy_^	2)+/ "	@e\ -0' -+	2.	23
$\underline{\mathbf{G:6}} < \mathbf{b} = \mathbf{\hat{b}}^{\underline{\$0}\underline{\$}}$				
-+-, 8bYTWU VQSY\Ydi	0 "	@e\ .,' -+	0	.,/
-+ 9bUTYd VQSY\Ydi o dbQ^SXU , \$T%	,),- "	IU`,1'-+-/	-34	0
-+ 9 bUTYd VQSY\Yd i o dbQ^SXU - T_{0}	,)-2 "	IU`,1'-+-0	3	0
; Y^Q^SU \UQcU Q^T _dXUb \YQRY\YdYUc			3-	,++
$J_dQ R_bb_g^{\gamma}Wc$			-'-2+	-'.,.
BUcc5 SebbU^d `_bdY_^ ^{\$U%}			\$.+-%	\$-3%
$B_W(dUb] R_bb_gYWc$! ,'413	! -'-30

\$R% 7 c _V : USU] RUb . ,' -+- ,' dXU <_hdU\ : URd =b_e` XQT e^TbQg^ S_]] Yd] U^dc _V 7 ! . /+] Y\\Y_^ QfQY\QR\U e^TUb dXUcU VQSY\YdYUc)

\$S%

7 fUbQWU' bUc`USdYfU\i'Q^T \$YY% bU] _fU dXU dg Q^T ,-(] _^dX Y^dUbUcd`UbY_T _`dY_c V_b dXU bU\UfQ^d ; eb_T_\\Qb HQdU R_bb_g Y^Wc)

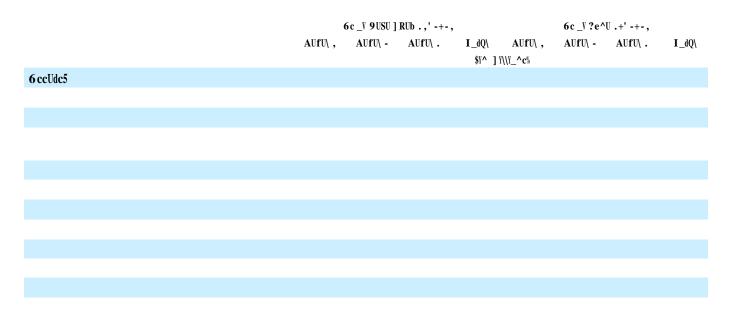
8-) / NKQL 8BCFJ>J@FJD

: ebY^W dXU cYh] _^dXc U^TUT : USU] RUb .,' -+- ,' H; 7 =b_e` S_] `\UdUT Q TURd bUVY^Q^SY^W Y^ g XYSX Yd bU`QYT Q\\ Q] _e^dc __edcdQ^TY^W e^TUb Ydc -+- , 8 bYTWU VQSY\Ydi g YdX dXU `b_SUUTc Vb_] Q ^Ug 7 !1++] Y\\Y_^ e^cUSebUT ci^TYSQdUT SbUTYd VQSY\Ydi \$dXU p-+-- 9 bUTYd <QSY\Ydi q% S_cYcdY^W _V d g_ ceR(VQSY\YdYUc5 \$Y% Q dXbUU

					; _b dXU dXbUU] _^dXc U^TUT 9	USU] RUb . ,' -+-+			
		8_]]_^ i_S[8_]]_^ i_S[6 TTYdY_^Q\ EQYT(Y^	6SSe]e\QdUT	6SSe] e\QdUT DdXUb 8] `bUXU^cYfU	I_dQ\ CUgc 8_b`	C_^(S_^db_\\\Y^W	I_dQ\
	HXQbUc	6]_e^d	HXQbUc	6]_e^d	8Q`YdQ\	9 UVISId	A_cc	:aeldi	>^dUbUcdc	:aeVdi
						\$Y^] Y\\Y_^c%				
8Q\Q^SU' IU`dU]RUb .+' -+-+	.4,	! /	-++	! -	!,-'+20	! \$.'-+2%	! \$,'0%	! 2'1.4	! 3,0	! 3'/0/
DUd Y^S_] U	0	0	0	0	0	,	0	,	.+	-1,
EdXUb S_] `bUXU^cYfU Y^S_]U	0	0	0	0	0	0	- /0	-/0	1.	.+3
: YfYTU^Tc	0	0	0	0	0	0	0	0	\$,%	\$,%
EdXUb	0	0	0	0	,1	0	0	,1	.1	0-
8Q\Q^SU' :USU]RUb .,' -+-+	.4,	! /	-++	! -	!,-'+4,	! \$-'421%	! \$44+%	! 3',.,	! 4/.	! 4'+2/

 $Id_S[bU`ebSXQcUc S_] U^SUT_^D_fU] RUb 4' -+-, 'Q^T TebY^W dXU dXbUU Q^T cYh]_^dXc U^TUT : USU] RUb ., '-+-, 'dXU 9_] `Q^i bU`ebSXQcUT Q^T ceRcUaeU^d\i bUdYbUT ,)/] Y\\Y_^ cXQbUc _V 9\Qcc 7 9_]]_^ Id_S[V_b Q``b_hY] QdU\i !.,] Y\\Y_^ Q^T +)2] Y\\Y_^ cXQbUc _V 9\Qcc 8 9_]]_^ Id_S[V_b Q``b_hY] QdU\i !, 0] Y\\Y_^) JXU 9_] `Q^i TYT ^d `ebSXQcU Q^i _V Ydc 9\Qcc 7 9_]]_^ Id_S[b 9\Qcc 8 9_]]_^ Id_S[TebY^W dXU cYh]_^ dXc U^TUT : USU] RUb ., '-+-+)$

Hd_S[X_\TUb GYWXdc 6WbUU]U^d



9UbYfQdYfU >^cdbe] U^dc

JXU 9_]`Q^i Yc TYbUSd\i Q^T Y^TYbUSd\i QVVUSdUT Ri bYc[c Qcc_SYQdUT g YdX SXQ^WUc Y^ SUbdQY^] Qb[Ud S_^TYdY_^c) MXU^ TUU] UT Q``b_`bYQdU' dXU 9_]`Q^i ecUc TUbYfQdYfU Y^cdbe] U^dc d_] YdYWQdU dXU `_dU^dYQ\ Y] `QSd _V dXUcU] Qb[Ud bYc[c) JXU `bY] Qbi] Qb[Ud bYc[c] Q^QWUT Ri dXU 9_]`Q^i dXb_eWX dXU ecU _V TUbYfQdYfU Y^cdbe] U^dc Y^S\eTU5

- m V_bUYW^ SebbU^Si UhSXQ^WU bQdU bYc [5 QbYcY^W `bY] QbY\i dXb_eWX <_hdU\ : URd =b_e` R_bb_gY^Wc TU^_] Y^QdUT Y^ K^YdUT IdQdUc \$pK)I)q% T_\\Qbc' `Qi] U^dc V_b Secd_] Ub `bU] YcU UaeY`] U^d Q^T SUbdQY^ `b_WbQ]] Y^W bYWXdc6 Q^T X^dUbUcd bQdU bYc [5 QbYcYW Vb_1] VVbUT QAT V) QdYAW bQdU < bdU : UPd =b_c` R_bb_cYWQ) X^dUbUcd bQdU bYc [5 QbYcYW Vb_1] VVbUT QAT V) QdYAW bQdU < bdU : UPd =b_c` R_bb_cYWQ)</p>
- $\mbox{m} \mbox{Y^dUbUcd bQdU bYc[5 QbYcY^W Vb_] VYhUT Q^T V_QdY^W bQdU < hdU : URd = b_e` R_bb_gY^Wc) }$

 $JXU 9_] `Q^i V_b] Q\i TUcYW^QdUc aeQ\YViY^W TUbYfQdYfUc Qc XUTWU bU\QdY_cXY`c $pXUTWUcq% Q^T Q``\YUc XUTWU QSS_e^dY^W gXU^S_cYTUbUT Q``b_`bYQdU) JXU 9_] `Q^i T_Uc ^_d ecU TUbYfQdYfU YY^Q^SYQ\Ycdbe] U^dc V_b dbQTY^W _b c`USe\QdYfU `eb`_cUc)$

: UbYfQdYfUc QbU S\QccYYYUT Qc SebbU^d _b ^_(SebbU^d Y^ dXU 8Q\Q^SU IXUUdc RQcUT _^ dXUYb] QdebYdi TQdUc) HUVUb d_ dXU dQR\U RU_g V_b VebdXUb TUdQY\c5

	7Q\Q^SU HXUUd A_SQdY_^	6 c _V 9 USU] RUb . ,' -+- ,	6c_V ?e^U.+'-+-,
		\$Y^] Y\	\Y_^c%
<_bUYW^ SebbU^Si TUbYfQdYfUc (SQcX V_g XUTWUc	EdXUb SebbU^d QccUdc	!,	! o
9b_cc SebbU^Si Y^dUbUcd bQdU TUbYfQdYfUc (VQYb fQ\eU XUTWUc	EdXUb SebbU^d QccUdc	, ,	0
9b_cc SebbU^Si Y^dUbUcd bQdU TUbYfQdYfUc	EdXUb SebbU^d QccUdc	/0	0
?^dUbUcd bQdU TUbYfQdYfUc (SQcX V_g XUTWUc			

C: LH 8DGEDG6I>DC CDI:HIDI=: JC6J9>I:9 8DCHDA>96I:9 ;>C6C8>6A HI6I:B:CIH

bUS\QccYVYUT _ed _V 7 SSe] e\QdUT _dXUb S_] `bUXU^cYfU _cc _fUb dXU bU] QY^Y^W dUb] _V dXU TUbYfQdYfUc) 9XQ^WUc Y^ dXU VQYb fQ\eUc _V dXUcU TUbYfQdYfUc gY\\ RU bUS_W^YjUT gYdXY^ EdXUb' ^Ud Y^ dXU IdQdU] U^dc _V E`UbQdY_^c _ Q `b_c`USdYfU RQcYc)

JXU d_dQ\ ^_dY_Q\ fQ\eU _V Sb_cc(SebbU^Si Y^dUbUcd bQdU cgQ`c V_b gXYSX dXU 9_]`Q^i TYcS_^dY^eUT XUTWU QSS_e^dY^W gQc Q``b_hY] QdU\i !-3+] Y\\Y_ Qc _V : USU] RUb .,' -+-,) JXU] QhY] e] XUTWUT dUb] _fUb gXYSX dXU 9_]`Q^i Yc XUTWY^W Uh`_cebU d_ fQbYQRY\Ydi Y^ Y^dUbUcd Q^T `bY^SY`Q\ `Qi] U^dc Yc d_ @e\i -+-/) 7c _V : USU] RUb .,' -+-,' dXU 9_]`Q^i UcdY] QdUc dXQd Q``b_hY] QdU\i !.] Y\\Y_^ V ^Ud TUbYfQdYfU WQY^c bU\QdUT d_ Ydc Sb_cc(SebbU^Si Y^dUbUcd bQdU cgQ` TUbYfQdYfU SQcX V_g XUTWUc Y^S\eTUT Y^ 7 SSe] e\QdUT_dXUb S_]` bUXU^cYfU _cc gY\\ RU bUS\QccYYYUT Y^d_dXU IdQdU] U^dc _V E`UbQdY_^c gYdXY^ dXU ^Uhd ,-]_^dXc)

 $J XU V_{\g Y^W dQR\Uc `bUcU^d dXU Y] `QSd dXQd SXQ^WUc Y^ dXU VQYb fQ\eUc XQT _^ 7SSe] e\QdUT _dXUb S_] `bUXU^cYfU _cc Q^T dXU IdQdU] U^dc _V E `UbQdY_c TebY^W dXU dXbUU Q^T cYh] _^dXc U^TUT : USU] RUb . ,' -+- , Q^T -+-+ V_b R_dX TUbYfQdYfUc TUcYW^QdUT Qc SQcX V_g XUTWUc dXQd S_^dY^eU d_ RU XYWX\i UVVUSdYfU Q^T TUbYfQdYfUc Y^YdYQ\\i TUcYW^QdUT Qc SQcX V_g XUTWUc Red V_b gXYSX XUTWU QSS_e^dY^W gQc TYcS_^dY^eUT Qc _V : USU] RUb . ,' -+- ,$

	<pre><qy^ \$_cc%="" bus_w^yjut="" th="" y^<=""><th colspan="4">\$<q\^\\cc \b_]<br="" bus\qcc\\\ut="">6SSe]e\QdUT DdXUb 8_]`bUXU^c\fU A_cc _b dXU dXbUU]_^dXc U^TUT 9USU]RUb.,'</q\^\\cc></th><th colspan="3">>^S_] U cdQdU] U^d _SQdI_^</th></qy^></pre>				\$ <q\^\\cc \b_]<br="" bus\qcc\\\ut="">6SSe]e\QdUT DdXUb 8_]`bUXU^c\fU A_cc _b dXU dXbUU]_^dXc U^TUT 9USU]RUb.,'</q\^\\cc>				>^S_] U cdQdU] U^d _SQdI_^		
		-+-,		-+-+ \$Y^]Y	<u>\\</u> Y_^	-+-,		•+•+			
$<_bUYW^ SebbU^Si TUbYfQdYfUc (SQcX V_g XUTWUc$!	0	!	0	!	0	!	\$,%	E`UbQdY^W Uh`U^cUc		
9b_cc(SebbU^Si Y^dUbUcd bQdU TUbYfQdYfUc		0		0		\$,%		0	?^dUbUcd Uh`U^cU' ^Ud		
?^dUbUcd bQdU TUbYfQdYfUc (SQcX V_g XUTWUc		/		\$,%		\$,%		-	?^dUbUcd Uh`U^cU' ^Ud		
J_dQ/	!	/	!	\$,%	!	\$ - %	!	,			
	65Se] e\QdUT DdXUb 65S 8_] `bUXU^clfU A_cc V_b dXU clh 8_] `bUXI										
	8_]	6SSe]e\(`bUXU^c\fU)dUT I A_co	DdXUb : V_b dXU cYh		\$ <qy^% _cc="" bus<br="">6SSe] e\Q _] `bUXU^cYfU] _^dXc U^TUT</qy^%>	dŬT I A_c	DdXUb c V_b dXU cYh	>^S_] U cdQdU] U^d SQdY_^		
	8_]	6SSe]e\(`bUXU^c\fU)dUT I A_co	DdXUb : V_b dXU cYh	8	6SSe] e\Q _] `bUXU^cYfU] _^dXc U^TUT -+-,	dŬT I A_c	DdXUb c V_b dXU cYh			
<_bUYW^ SebbU^Si TUbYfQdYfUc (SQcX V_g XUTWUc	8_]	6SSe]e\(bUXU^c\fU ^dXcU^TUT)dUT I A_co	DdXUb 2 V_b dXU cYh J] RUb . ,' -+-+	8	6SSe] e\Q _] `bUXU^cYfU] _^dXc U^TUT -+-,	dŬT I A_c	DdXUb c V_b dXU cYh U] RUb . ,'			
	8_]	6SSe]e\(bUXU^c\fU ^dXcU^TUT)dUT I A_co	DdXUb 2 V_b dXU cYh ∪] RUb . ,' -+-+ \$Y^] Y	8	6SSe] e\Q _] `bUXU^cYfU] _^dXc U^TUT -+-, c%	dŬT I A_c	DdXUb c V_b dXU cYh U] RUb . ,' -+-+	SQdĭ_^_		
XUTWUc	8_]	6SSe] e\(`bUXU^cYfU _^dXc U^TUT -+-,)dUT I A_co	DdXUb : Y _ b dXU cYh J] RUb . ,' -+-+ \$Y^] Y O	8	6SSē] e\Q _]`bUXU^ctfU]_^dXc U^TUT -+-, c%	dŬT I A_c	DdXUb c V b dXU cTh U J RUb .,' -+-+ \$,%	E`UbQdY^W Uh`U^cUc		

JXU Q] _e^dc bUS_W^YjUT Y^ EdXUb' ^Ud Y^ dXU IdQdU] U^dc _V E`UbQdY_^c bUce\dY^W Vb_] dXU SXQ^WUC Y^ VQYb fQ\eU _V Sb_cc(SebbU^Si Y^dUbUcd bQdU TUbYfQdYfUc dXQd gUbU TYcS_^dY^eUT Qc SQcX V_g XUTWUC TeU d_ XUTWU Y^UVUSdYfU^Ucc Qc _V : USU] RUb .,' -+-+ gQc Q WQY^ _V Q``b_hY] QdU\i !3] Y\\Y_ Q^T !,2] Y\\Y_ ^ V_b dXU dXbUU Q^T cYh] _^dXc U^TUT : USU] RUb .,' -+-,' bUc`USdYfU\i' Q^T Q _cc _V Q``b_hY] QdU\i !-] Y\\Y_ ^ V_b dXU dXbUU Q^T cYh] _^dXc U^TUT : USU] RUb .,' -+-+)

5 GOX \GR[K NKJMKY

8_bb_gY^Wc YcceUT Qd VYhUT bQdUc Q^T Y^ K)I) T_\\Qbc Uh`_cU dXU 9_]`Q^i d_ VQYb fQ\eU Y^dUbUcd bQdU bYc[Q^T SebbU^Si UhSXQ^WU bQdU bYc[) JXU 9_]`Q^i] Q^QWUc VQYb fQ\eU Y^dUbUcd bQdU bYc[Q^T SebbU^Si UhSXQ^WU bQdU bYc[dXb_eWX dXU ecU_V Sb_cc(SebbU^Si Y^dUbUcd bQdU cgQ`c e^TUb gXYSX dXU 9_]`Q^i UhSXQ^WUc VYhUT Y^dUbUcd `Qi] U^dc UaeYfQ\U^d d_dXU Y^dUbUcd `Qi] U^dc_ dXU K)I) T_\\Qb TU^_] Y^QdUT TURd V_b V_QdY^W bQdU 7 ecdbQ\YQ^T_\\Qb TU^_] Y^QdUT Y^dUbUcd `Qi] U^dc) JXU SXQ^WUc Y^ VQYb fQ\eU_V TUbYfQdYfUc TUcYW^QdUT Qc VQYb fQ\eU XUTWUC Q^T dXU_VVCUddY^W SXQ^WUc Y^ VQYb fQ\eU_V dXU XUTWUT YdU] c QbU bUS_W^YjUT Y^ EdXUb' ^Ud) <_b dXU cYh]_^dXc U^TUT : USU] RUb .,' -+-,' ceSX QTZecd] U^dc TUSbUQcUT dXU SQbbiY^W fQ\eU_V R_bb_gY^Wc Ri ^Y\)

 dXUcU] QddUbc) <UUc' Uh`U^cUc' VY^Uc' `U^Q\dYUc' ZeTW] U^dc _b cUdd\U] U^d S_cdc gXYSX] YWXd RU Y^SebbUT Ri dXU 9_] `Q^i Y^ S_^USdY_^ gYdX dXU fQbY_ec `b_SUUTY^Wc S_e\T QTfUbcU\i QVVUSd Ydc bUce\dc _V _`UbQdY_^c Q^T VY^Q^SYQ\ S_^TYdY_^)

JXU 9_] `Q^i UcdQR\YcXUc Q^ QSSbeUT \YQRY\Ydi V_b \UWQ\ S\QY] c gXU^ Yd TUdUb] Y^Uc dXQd Q _cc Yc R_dX `b_RQR\U Q^T dXU Q] _e^d _V dXU _cc SQ^ RU bUQc_^QR\i UcdY] QdUT) E^SU UcdQR\YcXUT' QSSbeQ\c QbU QTZecdUT Vb_] dY] U d_ dY] U 'd_ Q` `b_` bYQdU' Y^ \YWXd _V QTTYdY_^Q\ Y^V_b] QdY_^) JXU Q] _e^d _V Q^i _cc e\dY] QdU\i Y^SebbUT Y^ bU\\QdY_^ d_] QdUbc V_b gXYSX Q^ QSSbeQ\ XQc RUU^ UcdQR\YcXUT] Qi RU XYWXUb _b _gUb dXQ^ dXU Q] _e^dc QSSbeUT V_b ceSX] QdUbc) BUWQ\ VUUc Qcc_SYQdUT gYdX \YdYWQdY_^ Q^T cY] Y\\Qb `b_SUUTY^Wc QbU Uh`U^cUT Qc Y^SebbUT) ; hSU`d Qc _dXUb gYcU `b_fYTUT RU_g' V_b dXU S_^dY^WU^SYUc TYcS_cUT V_b gXYSX dXUbU Yc Qd \UQcd Q bUQc_^QR\U `_ccYRY\Ydi dXQd Q _cc] Qi RU Y^SebbUT' dXU 9_] `Q^i gQc e^QR\U d_ UcdY] QdU dXU Q] _e^d _V _cc _b bQ^WU _V _cc) JXU 9_] `Q^i bUS_W^YjUc WQY^ S_^dY^WU^SYUc gXU^ dXU WQY^ RUS_] Uc bUQ\YjUT _b bUQ\YjQR\U

<KJYOSKX0IG ; GXQKZ0TM

`bY]QbY\i TeU d_ fQ\eQdY_^ Q_gQ^SUc RUY^W bUS_bTUT QWQY^cd dQh RU^UVYdc Y^ SUbdQY^ V_bUYW^ ZebYcTYSdY_^c gYdX _`UbQdY^W _ccUc Q^T dXU Y]`QSd _V V_bUYW^ _`UbQdY_c gXYSX QbU ceRZUSd d_ XYWXUb dQh bQdUc' _VVcUd R i Q bU]UQcebU]U^d _V TUVUbbUT dQhUc Y^ dXU K)A)

 $<_b dXU cYh] _^dXc U^TUT : USU] RUb ., '-+-+' dXU 9_] `Q^i bUS_bTUT Y^S_] U dQh Uh`U^cU_V !, +] Y\\Y_^ ^ `bU(dQh Y^S_] U_V !/, 3] Y\\Y_^' bUcedY^W Y^ Q^ UVVUSdYFU dQh bQdU dXQd gQc XYWXUb dXQ^ dXU K)I) cdQded_bi dQh bQdU) JXU XYWXUb dQh bQdU gQc `bY] QbY\i TeU d_ fQ\eQdY_ Q_ gQ^SUc RUY^W bUS_bTUT QWQY^cd dQh RU^UVYdc Y^ SUbdQY^ V_bUYW^ ZebYcTYSdY_^c gYdX _`UbQdY^W _ccUc Q^T dXU Y] `QSd_V V_bUYW^ _`UbQdY_c gXYSX QbU ceRZUSd d_ XYWXUb dQh bQdUc' _VVcUd Ri Q bU] UQcebU] U^d_V TUVUbbUT dQhUc Y^ dXU K)A)$

 $C Q^{QWU}] U^{d} QccUccUc Q f Q' QR U U f YTU^{SU} d_ TUdUb] Y^{U} g XUdXUb ce VYYSYU^{d} VedebU dQhQR U Y^{S}] U g Y RU WU^{Ub}QdUT d_ `Ub] Y^{d} XU ec U _V UhYcdY^W TUVUbbUT dQh QccUdc) 8 QcUT _^] Q^{QWU}] U^{drc} QccUcc] U^{d} _V Q f Q' QR U U f YTU^{SU'} Y^{d} XQc RUU^ TUdUb] Y^{UT} dXQd Yd Yc] _bU Y [U i dXQ^ _d dXQd TUVUbbUT dQh QccUdc Y^ SUbdQY^ V_bUYW^ ZebYcTYSdY_c] Qi _d RU bUQ Y jUT Q^T dXUbUV_bU' Q f Q eQdY_^ Q _ Q Q SU XQc RUU^ UcdQR Y CUU QUQY^cd dX_cU dQh QccUdc)$

JXU 9_] `Q^irc dQh bUdeb^c QbU ceRZUSd d__^(W_Y^W bUfYU g Q^T UhQ] Y^QdY_^ Ri fQbY_ec dQh QedX_bYdYUc) JQh QedX_bYdYUc] Qi ^_d QWbUU g YdX dXU dbUQd] U^d _V YdU] c bU`_bdUT Y^ dXU 9_] `Q^irc dQh bUdeb^c' Q^T dXUbUV_bU dXU _edS_] U _V dQh bUfYU gc Q^T UhQ] Y^QdY_^c SQ^ RU e^`bUTYSdQR\U) JXU 9_] `Q^i Yc SebbU^d\i e^TUbW_Y^W dQh UhQ] Y^QdY_^c Y^ fQbY_ec K)I) cdQdU Q^T V_bUYW^ ZebYcTYSdY_c) JXU 9_] `Q^i Yc SebbU^d\i e^TUbW_Y^W Q^ QeTYd g YdX dXU ?^dUb^Q\ HUfU^eU IUbfYSU V_b dXU VYcSQ\ iUQb U^TUT @e^U .+' -+, 3) JXU 9_] `Q^i RU\YUfUc Yd XQc Q``b_`bYQdU\i QSSbeUT V_b dXU Uh`USdUT _edS_] U _V e^SUbdQY^ dQh] QddUbc Q^T RU\YUfUc ceSX \YQRY\YdYUc bU`bUcU^d Q bUQc_^QR\U `b_fYcY_^ V_b dQhUc e\dY] QdU\i Uh`USdUT d_ RU `QYT) >_g UfUb' dXU 9_] `Q^i] Qi ^UUT d_ QSSbeU QTTYdY_Q\ Y^S_] U dQh Uh`U^cU Q^T Ydc \YQRY\Ydi] Qi ^UUT d_ RU QTZecdUT Qc ^Ug Y^V_b] QdY_^ RUS_] Uc [^_g^ Q^T Qc dXUcU dQh UhQ] Y^QdY_c S_^dY^eU d_`b_WbUcc'_b Qc cUdd\U] U^dc _b YdYWQdY_c SSeb)

 $JXU 9_] `Q^i `Q'T Wb_cc Y^S_] U dQhUc _V !4-] Y\\Y_^ Q^T !43] Y\\Y_^ TebY^W dXU cYh] _^dXc U^TUT : USU] RUb .,' -+-, Q^T -+-+' bUc`USdYfU\i' Q^T bUSUYfUT dQh bUVe^Tc _V !,] Y\\Y_^ Q^T !4] Y\\Y_^' bUc`USdYfU\i)$

CDI:,-)H: < B:CI > C; DGB 6I > DC

-++

JXU 9] `Q^i] Q^QWUc Q^T bU`_bdc Ydc RecY^UccUc Y^ dXU V__g Y^W cYh cUW] U^dc5

W 9Q?0@NFLPFKJ <FABK 9BNRF@B0 o JXU 9_]`Q^irc IeRcSbY`dY_^ LYTU_ IUbfYSUc cUW] U^d `b_fYTUc c`_bdc' U^dUbdQY^] U^d Q^T ^Ug c cUbfYSUc d_ `Qi(JL Q^T cdbUQ] Y^W ceRcSbYRUbc Q^T _dXUb S_]] UbSYQ\ \/YSU^cUUc' `bY] QbY\i fYQ SQR\U' cQdU\\YdU Q^T Y^dUb^Ud TYcdbYRedY_^' Q^T S_^cYcdc _V \$Y% dXU 9_]`Q^irc 10 " Y^dUbUcd Y^ dXU <_hdU\ =b_e` \$gYdX dXU bU] QY^Y^W . 0 " Y^dUbUcd XU\T Ri JU\cdbQ' Q^ 7 IN(\YcdUT dU\US_]] e^YSQdY_c S_]`Q^i% Q^T \$YY% 7 ecdbQ\YQ^ DUgc 9XQYa^U\ \$p-7 D9q%) JXU <_hdU\ =b_e` Yc dXU \QbWUcd 7 ecdbQ\YQ^(RQcUT ceRcSbY`dY_g dU\UfWcT_8' 7%26#XdUb' gYdX ^UQb\i -++ SXQ^^U\c S_fUbY^W c`_bdc' WU^UbQ\ U^dUbdQY^] U^d'] _fYUc' T_Se] U^dQbYUc'] ecYS' SXY\TbU^rc 7 D9 _`UbQdUc dXU IAO D; MI ^Udg_b[' 7 ecdbQ\YQrc -/(X_eb] e\dY(SXQ^U\'] e\dY(`\QdV_b] ^Ugc cUbfYSU) 7 D9 SXQ^U\c QbU TYcdbYRedUT dXb_eWX_ed 7 ecdbQ\YQ Q^T DUg PUQ\Q^T Q^T QfQY\QR\U _^ <_hdU\ Q^T I [i DUdg_b[JU\UfYcY_ DP) 7 D9 Q\c_ _g^c Q^T _`UbQdUc dXU Y^dUb^QdY_Q\ 7 ecdbQ\YQ 9XQ^U\ ?FJL cUbfYSU Q^T _VVUbc S_^dU^d QSb_cc Q fQbYUdi _V TYWYdQ\] UTYQ `\QdV_b] c' Y^S\eTY^W gUR'] _RY\U Q^T dXybT(`Qbdi `b_fYTUbc)

- W , KS 2KJB0 o JXU : _g @_^Uc cUW] U^d S_^CYcdc _V : _g @_^Uc' Q W_RQ\ `b_fYTUb _V ^Ug c Q^T RecY^Ucc Y^V_b] QdY_^' gXYSX TYcdbYRedUc Ydc S_^dU^d Q^T TQdQ dXb_eWX Q fQbYUdi _V] UTYQ SXQ^^U\c Y^S\eTY^W ^Ug c Q`Ubc' ^Ug c gYbUc' gURcYdUc' Q` \YSQdY_^c' _b Q``c' V_b] _RY\U TU fYSUc' dQR\Udc Q^T U(R__[bUQTUbc' ^Ug c\UddUbc'] QWQjY^Uc' `b_`bYUdQbi TQdQRQcUc' \YfU Z_eb^Q\Yc]' fYTU_ Q^T `_TSQcdc) JXU : _g @_^Uc cUW] U^drc `b_TeSdc' gXYSX dQbWUd Y^TYfYTeQ\ S_^ce] Ubc Q^T U^dUb`bYcU Secd_] Ubc' Y^S\eTU BNK EGRR AZXKKZ 9U[XTGR' <QSdYfQ' : _g @_^Uc HYc[# 9_] `\YQ^SU' : _g @_^Uc DUg cg YbUc' 1 GXXUTbY' CQb[UdMQdSX Q^T ?^fUcd_brc 8ecY^Ucc : QY\i)
- W 5BS0 4BAF> o JXU DUgc CUTYQ cUW] U^d S_^cYcdc `bY] QbY\i _V DUgc 9_b` 7 ecdbQ\YQ' DUgc KA Q^T dXU <K] FUXQ >UYZ Q^T Y^S\eTUc' Q] _^W _dXUb `eR\YSQdY_c' BNK 0[YZXGR0GT\ BNK 3 G0R_ BKRKMXGVN\ 7 KXGRJ A[T\ BNK 2 U[X0KX ; G0R Q^T BNK 0J\KXZ0YKX Y^ 7 ecdbQ\YQ Q^T BNK B0 S KY\ BNK A[TJG_ B0 S KY\ BNK A[T Q^T BNK A[T UT A[TJG_ Y^ dXU K)A)

I UW] U^d <code>Y^V_b</code>] <code>QdY_^ Yc</code> <code>ce</code>]] <code>QbYjUT</code> <code>Qc</code> <code>V__gc5</code>

			;_b dXU dXbUU]_^dXc U^TUT 9USU] RUb . ,'			;		h] _^dXc U^TUT U] RUb . ,'		
				-+-,		-+-+		-+-,		•+•+
HUfU^eUc5						\$Y^] Y	MI_^0	:",		
: YWYdQ\ HUQ\ ;cdQdU IUbfYSUc			!	/01	!	4	!	33-	!	1-4
IeRcSby`dy_^ LYTU_ IUbfYSUc	:			/43		0,,		, '++3		, '++2
:_g @_^Uc				0+3		//1		40-		3
8_[FeR\YcXY^W				1,2		0//		,',1.		, '++-
DUgc CUTYQ .4 .4	.4	.4		1.3		02.		,'-,/		, '+1+
€dXUb	‰%	00		0		,		0		,
J_dQ\ bUfU^eUc			!	-'2,2	!	-'/,/	!	0'-,4	!	/'0.,
IUW]U^d;8?J:75										
: YWYdQ\ HUQ\ ; cdQdU IUbfYSUc			!	,23	!	, / -	!	.,1	!	-1,
IeRcSby`dy_^ LYTU_ IUbfYSUc	:			31		, - /		-++		-+-
:_g @_^Uc				,//		,+4		4		,3,
8_[FeR\YcXY^W				,+2 °	60					%

C: LH 8DGEDG6I>DC CDI:HIDI=: JC6J9>I:9 8DCHDA>96I:9 ;>C6C8>6A HI6I:B:CIH

		6c_V RUb.,'-+-,	6c_V ?e^U.+'-+-,
		\$Y^] Y\\Y	_^c%
=T g Y\\ Q^T Y^dQ^WYR\U QccUdc' ^Ud5			
: YWYdQ\ HUQ\ ; cdQdU IUbfYSUc	!	, '3-2	, '32,
IeRcSbY`dY_^ LYTU_ IUbfYSUc		, '0+1	, '1 , -
: _g @_^Uc		, '431	, '440
8[FeR\YcXY^W		, '+,2	, '+/1
DUgc CUTYQ		.+.	.+3
$J_dQ = Tg Y + Q^T Y^dQ^W R + U QccUdc'^Ud$!	1'1.4	. 1'3

CDI: ,.) 699>I>DC6A ;>C6C8>6A>C;DGB6I>DC

8 B@BFR>?HBO" JBP

 $HUSUY fQR \ Qbu \ bucu^dUT \ Ud \ VQ \ gQ^SUc' gXYSX \ buv \ USd \ dXU \ 9_] \ Q^irc \ Uh \ USdUT \ SbUTYd \ ccuc \ RQcuT \ ^XYcd_bYSQ \ Uh \ UbYU^SU \ Qc \ gU \ Qc \ Sebbu^d \ Q^T \ Uh \ USdUT \ US_^] \ YS \ S_^TYdY_c)$

HUSUYfQR\Uc' ^Ud S_^cYcd _V5

	6c_V 9USU] RUb .,' -+-,	6c_V ?e^U.+'-+-,
	\$Y^] Y	\Y_ ^c %
HUSUYfQR\Uc	! ,'2.3	! ,'014
BUcc5 Q_g Q^SUc	\$2.%	\$2,%
HUSUYfQR\Uc' ^Ud	!,'110	! ,'/43

6PEBN 5KJ#+QNNBJP)00BP0

J XU V__gY^W dQR\U cUdc V_bdX dXU S_] `_^U^dc _V EdXUb ^_^(SebbU^d QccUdc5

	бс 9 USU] RUb		6c_V ?e^U .+' -+-,
		\$Y^] Y\\Y_^	c%
H_iQ\di QTfQ^SUc d_QedX_bc	!	.43 !	/+1
HUdYbU] U^d RU^UVYd QccUdc		,./	, -+
?^fU^d_bi ^{\$Q%}		-1-	-24
DUgc 7] UbYSQ CQb[UdY^W TUVUbbUT S_^cYTUbQdY_^		,.0	, -3
EdXUb		/01	0,/
J_dQ\ EdXUb ^_^(SebbU^d QccUdc	!	,'.30 !	,'//2

\$Q% FbY] QbY\i S_^cYcdc _V dXU ^_(SebbU^d `_bdY_^ V `b_WbQ]] Y^W bYWXdc)

C: LH 8DGEDG6I>DC CDI:HIDI=: JC6J9>I:9 8DCHDA>96I:9 ;>C6C8>6A HI6I:B:CIH

6 PEBN +QNNBJP 3F>?FHFPFB0

JXU V__gY^W dQR\U cUdc V_bdX dXU S_] `_^U^dc _V EdXUb SebbU^d \YQRY\YdYUc5

	9 USU]	6c_V RUb.,'-+-,	6c_V ?e^U .+' -+-,	
		\$Y^] Y\\Y	_^c%	
$H_iQ\dYUcQ^TS_]] YccY_c QiQRU$!	/	! -+1	
9 ebbU^d _` UbQdY^W \UQcU \YQRY\YdYUc		,/.	,/.	
$7 \leq g^{SU V_b cQUc bUdeb^c}$		-,+	,4+	
$9 ebbU^{d} dQh ~QiQR/U$.+	
EdXUb		.3+	0+/	
J_dQ\ EdXUb SebbU^d \YQRY\YdYUc	!	,'+++	! ,'+2.	

6 PEBN" JBP

J XU V__g Y^W dQR\U cUdc V_bdX dXU S_] `_^U^dc _V EdXUb' ^Ud5

		; _b dXU dXbUU] _^dXc U^TUT 9USU] RUb . ,'			;_b d] _^dXc U^TUT] RUb . ,'		
	-+-,	-+-,			-+-,		-	+-+	
		\$Y^] Y\\Y_^c%							
HU] UQcebU] U^d _V UaeYdi cUSebYdYUc	! \$	4%	! .	2	!	,4	!	/1	
: YfYTU^Tc bUSUYfUT Vb_] UaeYdi cUSebYdi Y^fUcd]U^dc		4		,		,+			
\$B_cc% WQY^ _^ cQ\U _V RecY^UccUc ^{\$Q%}	\$	4%		С		43		0	
=QY^ _^ bU] UQcebU] U^d _V `bUfY_ec $i(XUT Y^dUbUcd^{SR_6})$				2				2	
EdXUb	\$,%		4		0		,0	
J_dQ\ EdXUb' ^Ud	! \$	2%	! 0)/	!	,.+	!	2,	

\$R% HU\QdUc d_ dXU QSaeYcYdY_^ V ;\QbQ Y^ dXU dXbUU Q^T cYh]_^dXc U^TUT : USU] RUb . ,' -+-+)

9QLLHB I BJP>H +>0E . HKS 1JCKN I >PFKJ

J XU V__gY^W dQR\U cUdc V_bdX dXU 9_] `Q^irc SQcX `QYT V_b dQhUc Q^T Y^dUbUcd5

	-	; _b dXU c'h] _^dXc U^TUT 9 USU] RUb . ,'				
		-+-,	-	+-+		
		\$Y^]	Y\\Y_^c%			
Y^dUbUcd		! /4	!	-3		
dQhUc		! 4-	!	43		

CDI:,/)**HJ7H:FJ:CI**:**K**:**CIH**

?^ <URbeQbi -+--' dXU 9_] `Q^irc 8_QbT_V : YbUSd_bc TUS\QbUT Q cU] Y(Q^^eQ\ SQcX TYfYTU^T _V !+), + `Ub cXQbU V_b 9\Qcc 7
9_]]_^ Id_S[Q^T 9\Qcc 8 9_]]_^ Id_S[) JXU TYfYTU^T Yc `QiQR\U ^ 7 `bY\ , .' -+-- d_ cd_S[X_\TUbc_V bUS_bT Qc_V CQbSX
,1' -+--)</pre>

>I:B -) B6C6<:B:CIH 9>H8JHH>DC 6C9 6C6ANH>HD; ;>C6C8>6A 8DC9>I>DC 6C9 G:HJAIHD; DE:G6I>DCH

BNOY JUI[SKTZ% 0TIR[J0TM 2NK LURRU]0TM J0YI[YY0UT GTJ GTGR_Y0Y% IUTZG0TY YZGZK SKTZY ZNGZ IUTYZ0Z[ZK `LUX]GXJ&RUUQ0TM YZGZK SKTZYA]0ZNOT ZNK SKGT0TM UL AKIZ0UT *)4 UL ZNK AKI[X0Z0KY 4^INGTMK OIZ UL).+, % GY G SKTJKJ #ZNK `4^INGTMK OIZa\$% GTJ AKIZ0UT *-O UL ZNK AKI[X0Z0KY OIZ UL).++% GY G SKTJKJ' OR YZGZK SKTZY ZNGZ GXK TUZ YZGZK SKTZY UL N0YZUX0IGR LGIZ GXK LUX]GXJ& RUUQ0TM YZGZK SKTZY' BNK]UXJY `K^VKIZ%A `]0RR%A `KYZ0 S GZK%A `GTZ010VGZK%A `VXKJ0IZ%A `HKR0K\KA GTJ Y0 S0RGX K^VXKYY0UTY GTJ \GX0GZ0UTY ZNKXKUL GXK 0TZKTJKJ ZU 0JKTZ0L_LUX]GXJ&RUUQ0TM YZGZK SKTZY' BNKYK YZGZK SKTZY GVVKGX 0T G T[SHKX UL VRGIKY 0T ZN0Y J0YI[YY0UT GTJ GTGR_Y0Y GTJ 0TIR[JK YZGZK SKTZY XKMGXJ0TM ZNK 0TZKTZ% HKR0KL UX 1[XXKTZ K^VKIZG20UTY UL ZNK 2 U SVGT_M 02Y J0XKIZUXY UX 0ZY ULL0IKXY]0ZN XKYVKIZ ZU% G S UTM UZNKX ZN0TMY% ZXKTJY GLLKIZ0TM ZNK 2 U SVGT_bY L0TGT10GR IUTJ0Z0UT UX XKY[RZY UL UVKXGZ0UTY% ZNK 2 U SVGT_bY YZXGZKM_GTJ YZXGZKM01 0T0Z0GZ0\KY GTJ ZNK U[ZIU S K UL IUTZ0TMKT10KY Y[IN GY R0Z0MGZ0UT GTJ 0T\KYZ0MGZ0UTY'@KGJKXY GXK 1G[Z0UTKJ ZNGZ GT_LUX]GXJ&RUUQ0TM YZGZK S KTZY GXK TUZ M[GXGTZKKY UL L[Z[XK VKXLUX S GTIK GTJ 0T\UR\K X0YQY GTJ [TIKXZG0TZ0KY'; UXK 0TLUX S GZ0UT XKMGXJ0TM ZNKYK X0YQY GTJ [TIKXZG0TZ0KY GTJ UZNKX 0 S VUZZGTZ LGIZUXY ZNGZ IU[RJ 1G[YK GIZ[GR XKY[RZY ZU J0LLKX S GZKX0GRR_LXU S ZNUYK 0T ZNK LUX]GXJ&RUUQ0TM YZGZK S KTZY 0Y YKZ LUXZN [TJKX ZNK NKGJ0TM `@0YQ 5 GIZUXYA 0T >GXZ 8% 8ZKS)0'0T < K]Y 2 UXVUXGZ0UTBY OTT[GR @KVUXZ UT 5UX S)(&: LUX 2NK L0Y1GR _KGX KTJKJ9[TK +(% *(*) ; hSXQ^WU \$p7INq% \$7IN5 H; 7%) H; 7 =b_e`QTfUbdYcUc`b_`Ubdi Q^T`b_`Ubdi (bU\QdUT cUbfYSUc_^Ydc gURcYdUc Q^T]_RY\U Q``c' Y^S\eTY^W 7 ecdbQ\YQrc \UQTY^W bUcYTU^dYQ\'S_]]UbSYQ\ Q^T cXQbU`b_`Ubdi gURcYdUc' bUQ\UcdQdU)S_])Qe' bUQ\S_]]UbSYQ\S_]]Qe Q^T <\Qd]QdUc)S_])Qe' Q^T`b_`Ubdi `_bdQ\c Y^?^TYQ) ?^ QTTYdY_^' H; 7 =b_e``b_fYTUc`b_`Ubdi (bU\QdUT TQdQ d_ dXU VY^Q^SYQ\ cUSd_b Q^T VY^Q^SYQ\ cUbfYSUc dXb_eWX Q^ U^T(d_(U^T TYWYdQ\ `b `Ubdi cUQbSX Q^T VY^Q^SY^W Uh`UbYU^SU Q^T Q] bdWQWU Rb [Y^W VVUbY^W)

QTZecd] U^dc) 8QcU 9XU] YSQ\c `b_fYTUc `bYSY^W TQdQ' Y^cYWXdc' Q^Q\icYc Q^T V_bUSQcdY^W V_b [Ui RQcU SXU] YSQ\c dXb_eWX Ydc \UQTY^W CQb[Ud 7TfYc_bi Q^T M_b\T 7^Q\icYc cUbfYSUc) JXU QSaeYcYdY_^ gY\\S_] `\U] U^d dXU 9_] `Q^irc `\Q^UT QSaeYcYdY__ V EF?I \$Qc TUYY^UT RU_g % Q^T U^QR\U : _g @_^Uc d_ VebdXUb Uh `Q^T Y^d_ ^Ug Secd_] Ub cUW] U^dc Q^T R_\cdUb Ydc `\Q^c d_ SbUQdU Q ^Ug U^UbWi ' SXU] YSQ\c Q^T bU^Ug QR\Uc fUbdYSQ\ d_ TU\YfUb fQ\eQR\U Q^T dbecdUT c`USYQ\YjUT S_^dU^d) 8QcU 9XU] YSQ\c gY\\ RU Q ceRcYTYQbi _V : _g @_^Uc' Q^T Ydc bUce\dc gY\\ RU Y^S\eTUT Y^ dXU : _g @_^Uc cUW] U^d) JXU QSaeYcYdY_^ Yc ceRZUSd d_ Secd_] Qbi S_cY^W S_^TYdY_c' Y^S\eTY^W bUWe\Qd_bi Q``b_fQ\c Q^T dXU S_ce]] QdY_ V dXU I #F Q^T ?>I] UbWUb) 9_cY^W Yc Uh`USdUT Y^

) @MQFOFFFKJ KC 1JRBOPKNYO *QOFJBOO , >FHU

?^ CQi -+-,' dXU 9_] `Q^i QSaeYbUT ?^fUcd_brc 8ecY^Ucc : QY\i \$p?8 : q% V_b !-20] Y\\Y_^ Y^ SQcX) ?8 : Yc Q TYWYdQ\(VYbcd YY^Q^SYQ\ ^Ugc Q^T bUcUQbSX RecY^Ucc gYdX e^YaeU Y^fUcdY^W S_^dU^d' Q^Q\idYSQ\ `b_TeSdc Q^T UTeSQdY_^Q\ bUc_ebSUc' Y^S\eTY^W dXU ?^fUcd_bc)S_] gURcYdU) JXU QSaeYcYdY_^ Uh`Q^Tc : _g @_^Ucrc _VVUbY^Wc gYdX dXU QTTYdY_^ V `b_`bYUdQbi TQdQ Q^T d__\c d_ XU\` `b_VUccY_^Q\ Q^T bUdQY\ Y^fUcd_bc YTU^dYVi d_`(`UbV_b] Y^W cd_S[c) ?8 : Yc _`UbQdUT Ri : _g @_^Uc' Q^T Ydc bUce\dc QbU Y^S\eTUT gYdXY^ dXU : _g @_^Uc cUW] U^d)

G:HJAIHD; DE:G6I>DCH

8BOQHPO KC 6LBN>PFKJOX. KN PEB PENBB > JA OFT I KJPEO BJABA, B@B I ?BN (&" '%'& RBNOQO PEB PENBB > JA OFT I KJPEO BJABA, B@B I ?BN (&" '%'%

JXU V__gY^W dQR\U cUdc V_bdX dXU 9_]`Q^irc_`UbQdY^W bUce\dc V_b dXU dXbUU Q^T cYh]_^dXc U^TUT : USU] RUb .,' -+-, Qc S_]`QbUT d_ dXU dXbUU Q^T cYh]_^dXc U^TUT : USU] RUb .,' -+-+)

	; _b dXU dXbUU] _^dXc U^TUT 9USU] RUb . ,'					; _b dXU cih] _^dXc U^TUT 9USU] RUb . ,'					
	- +-,	- + - +	8 XQ^WU	" 8 XQ^WU	- +-,	-+-+	8 XQ^WU	" 8 XQ^WU			
\$Y^] Y\\Y_^c' UhSU`d "%			7 UddUb*\$	L_bcU%			7 UddUb*\$	L_bcU%			
HUfU^eUc5											
9 YbSe\QdY_^ Q^T ceRcSbY`dY_^	! ,'+2-	! ,'+.+	! /-	/ "	! -',/4	! -'+	! ,,2	1 "			
7TfUbdYcY^W	0,4	//3	2,	,1 "	4-/	23+	,//	,3 "			
9_^ce]Ub	04/	0	2,	,/ "	,',,3	41/	,0/	,1 "			
HUQ\ UcdQdU	.0-	-3,	2,								

I Q**R**\U_V **8**_^dU^dc

SYbSe\QdY_^ Q^T ceRcSbY`dY_^ bUfU^eUc Q^T Qd dXU :_g @_^Uc cUW] U^d `bY] QbY\i TeU d_ XYWXUb QTfUbdYcY^W bUfU^eUc' XYWXUb SYbSe\QdY_^ Q^T ceRcSbY`dY_^ bUfU^eUc Q^T dXU QSaeYcYdY_^ V ?8 :) JXU Y] `QSd_V V_bUYW^ SebbU^Si V\eSdeQdY_cc_V dXU K)I) T_\\Qb QWQY^cd _SQ\ SebbU^SYUc bUce\dUT Y^ Q bUfU^eU Y^SbUQcU_V !1.] Y\\Y_^' _b , "' V_b dXU cYh] _^dXc U^TUT : USU] RUb .,' -+-, Qc S_] `QbUT d_ dXU S_bbUc`_^TY^W `UbY_T_V VYcSQ\ -+-,)

JXU 9_]`Q^i SQ\Se\QdUc dXU Y]`QSd_V V_bUYW^ SebbU^Si V\eSdeQdY_^c V_b RecY^UccUc bU`_bdY^W Y^ SebbU^SYUc _dXUb dXQ^ dXU K)I) T_\\Qb Ri] e\dY`\iY^W dXU bUce\dc V_b UQSX aeQbdUb Y^ dXU SebbU^d `UbY_T Ri dXU TYVUbU^SU RUdg UU^ dXU QfUbQWU UhSXQ^WU bQdU V_b dXQd aeQbdUb Q^T dXU QfUbQWU UhSXQ^WU bQdU Y^ UVVUSd TebY^W dXU S_bbUc`_^TY^W aeQbdUb _V dXU `bY_b iUQb Q^T d_dQ\Y^W dXU Y]`QSd V b Q\\ aeQbdUbc Y^ dXU SebbU^d `UbY_T)

6LBN>PfJD BTLBJ0B0 o E`UbQdY^W Uh`U^cUc Y^SbUQcUT !3,]Y\\Y_^'_b 2 "'Q^T !,1,]Y\\Y_^'_b 2 "'V_b dXU dXbUU Q^T cYh]_^dXc U^TUT :USU] RUb ., '-+-, 'bUc`USdYfU\i'Qc S_]`QbUT d_ dXU S_bbUc`_^TY^W `UbY_Tc_V VYcSQ\ -+-,)

JXU Y^SbUQcU Y^ _`UbQdY^W Uh`U^cUc V_b dXU dXbUU] _^dXc U^TUT : USU] RUb .,' -+-, gQc `bY] QbY\i TbYfU^ Ri XYWXUb Uh`U^cUc Qd dXU 8__ [FeR\YcXY^W cUW] U^d TeU d_ dXU QSaeYcYdY_ _V > C > 8__ [c Q^T CUTYQ' XYWXUb S_cdc bU\QdUT d_ Y^SbUQcUT cQ\Uc f_\e] Uc Q^T dXU] Yh _V dYd\Uc Q^T Y^SbUQcUT] Q^eVQSdebY^W Q^T VbUYWXd S_cdc UhQSUbRQdUT Ri ce``\i SXQY^ `bUccebUc) JXU Y] `QSd _V V_bUYW^ SebbU^Si V\eSdeQdY_cc _V dXU K)I) T_\\Qb QWQY^cd _SQ\ SebbU^SYUc bUce\dUT Y^ Q^ E`UbQdY^W Uh`U^cU Y^SbUQcU _V !.] Y\\Y_^ V_b dXU dXbUU] _^dXc U^TUT : USU] RUb .,' -+-, Qc S_] `QbUT d_ dXU S_bbUc`_TY^W `UbY_T _V VYcSQ\ -+-,)

JXU Y^SbUQcU Y^ _`UbQdY^W Uh`U^cUc V_b dXU cYh] _^dXc U^TUT : USU] RUb ., ' -+-, gQc `bY] QbY\i TbYfU^Ri XYWXUb Uh`U^cUc Qd dXU 8 __ [FeR\YcXY^W cUW] U^d TeU d_dXU QsaeYcYdY_ V > C > 8 __ [c Q^T CUTYQ' XYWXUb S_cdc bU\QdUT d_ Y^SbUQcUT cQ\Uc f_\e] Uc Q^T dXU] Yh_V dYd\Uc Q^T Y^SbUQcUT] Q^eVQSdebY^W Q^T VbUYWXd S_cdc UhQSUbRQdUT Ri ce``\i SXQY^ bUccebUc' Qd dXU DU gc CUTYQ cUW] U^d TbYfU^Ri dXU !, 0] Y\\Y_^ UWQdYfU Y] `QSd _V V_bUYW^ SebbU^Si V\eSdeQdY_c Q^T Qd dXU : YWYdQ\ HUQ\ ;cdQdU IUbfYSUc cUW] U^d TeU d_XYWXUb U] `_iUU S_cdc Qd C_fU) JXU 9_] `Q^i XQc WU^UbQ\\i _RcUbfUT Q^ Y^SbUQcY^W\i S_] `UdYdYfU \QR_b] Qb[Ud gXYSX XQc \UT d_XYWXUb S_] `U^cQdY_ Q^T XYbY^W S_cdc V_b QddbQSdY^W Q^T bUdQY^Y^W XYWX\i aeQ\YYUT U] `_iUUc QSb_cc Ydc RecY^UccUc Q^T Yc Uh`USdUT d_Y] `QSd dXU 9_] `Q^irc S_cd RQcU Y^ dXU ~UQb dUb]) JXU Y^SbUQcUT Uh`U^cUc gUbU `QbdYQ\\i _WcUd Ri _gUb Uh`U^cUc Qd dXU I eRcSbY` dY_ LYTU_ IUbfYSUc cUW] U^d `bY] QbY\i TeU d_ dXU QRcU^SU _V !01] Y\\Y_^ U QTTYdY_Q\ c`_bdc `b_WbQ]] Y^W bYWXdc Q^T `b_TeSdY_ S_cdc bUS_W^YJUT Y^ dXU `bY_b iUQb dXQd gUbU TUVUbbUT Vb_] YYcSQ\ -+-+ TeU d_ dXU S_b_C^Y QAT SYSX gQc `QbdYQ\\i _WcUd Ri Y^SbUQcUT c`_bdc `b_WbQ] Y^W bYWXdc S_cdc TeU d_ dXU SebbU^d iUQb JXU Y] `QSd _V _bUYW^ SebbU^Si V\eSdeQdY_c _V dXU K)I) T_\\Qb QWQY^cd _SQ\ SebbU^SYUc bUce\dUT Y^ Q E`UbQdY^W Uh`U^cU YSbUQcU _V !.+] Y\\Y_' b, "' V_b dXU cYh] _dXc U^TUT : USU] RUb .,' -+-, Qc S_] `QbUT d_ dXU S_bbUc`_TYYW `UbY_T V YCSQ\ -+-,

9BHHFJD" DBJBN>H >JA >A I FJF0PN>PFRB o IU\\Y^W' WU^UbQ\ Q^T QT] Y^YcdbQdYfU Y^SbUQcUT !,..] Y\\Y_^'_b ,3 "' Q^T !-41] Y\\Y_^'_b -, "' V_b dXU dXbUU Q^T cYh] _^dXc U^TUT : USU] RUb .,' -+-,' bUc`USdYfU\i' Qc S_] `QbUT d_ dXU S_bbUc`_^TY^W `UbY_Tc _V VYcSQ\ -+-,)

JXU Y^SbUQcU Y^ cU\\Y^W' WU^UbQ\ Q^T QT] Y^YcdbQdYfU V_b dXU dXbUU] _^dXc U^TUT : USU] RUb .,'-+-, gQc `b'] Qb'\i TbYfU^ Ri Y^SbUQcUT Uh`U^cUc Qd dXU : YWYdQ\ HUQ\ ; cdQdU IUbfYSUc cUW] U^d TeU d_ dXU QSaeYcYdY_^c _V C_bdWQWU 9X_YSU Q^T ;\QbQ \$gXYSX gQc bURbQ^TUT d_ H; 7 ?^TYQW' XYWXUb U] `_iUU S_cdc Qd R_dX C_fU Q^T H; 7 =b_e` Q^T Y^SbUQcUT] Qb[UdY^W Uh`U^cU Qd C_fU) JXU Y^SbUQcU gQc Q\c_TbYfU^ Ri dXU :_g @_^Uc cUW] U^d TeU d_ dXU QSaeYcYdY_^ V ?8 : Q^T XYWXUb `b_VUccY_Q\ cUbfYSUc VUUc' Ri Y^SbUQcUT] Qb[UdY^W Q^T dUSX^_\Wi S_cdc Qd dXU I eRcSbY`dY_^ LYTU_ IUbfYSUc cUW] U^d' Ri XYWXUb S_cdc Qd dXU DU gc CUTYQ cUW] U^d TeU d_ Y^SbUQcUT bUfU^eUc Q^T Ri dXU QSaeYcYdY_^ V > C > 8 __[c Q^T CUTYQ) JXU Y] `QSd _V V_bUYW^ SebbU^Si V\eSdeQdY_^c _V dXU K)I) T_\\Qb QWQY^cd _SQ\ SebbU^SYUc bUcc\dUT Y^ Q IU\\Y^W' WU^UbQ\ Q^T QT] Y^YcdbQdYfU Y^SbUQcU _V !-] Y\\Y_ V_b dXU dXbUU] _^dXc U^TUT : USU] RUb ., ' -+-, Qc S_] `QbUT d_ dXU S_bbUc`_TY^W `UbY_T _V VCSQ\ -+-,)

JXU Y^SbUQcU Y^ cU\\Y^W' WU^UbQ\ Q^T QT] Y^YcdbQdY fU V_b dXU cYh] _^dXc U^TUT : USU] RUb .,' -+-, gQc `bY] QbY\i TbY fU^ Ri Y^SbUQcUT Uh`U^cUc Qd dXU : YWYdQ\ HUQ\ ; cdQdU IUbfYSUc cUW] U^d TEU d_ dXU QSaeYcYdY_^c _V C_bdWQWU 9X_YSU Q^T H ; 7 ?^TYQ' XYWXUb U] `_iUU S_cdc Qd R_dX C_fU Q^T H ; 7 = b_e` Q^T Y^SbUQcUT] Qb[UdY^W Uh`U^cU Qd C_fU) JXU Y^SbUQcU gQc Q\c_TbYfU^ Ri dXU : _g @_^Uc cUW] U^d TEU d_ dXU QSaeYcYdY_^ V ?8 : 'XYWXUb`b_VUcCY_Q\ cUbfYSUc VUUc Q^T Y^SbUQcUT U] `_iUU S_cdc' Ri XYWXUb S_cdc Qd dXU DUgc CUTYQ cUW] U^d TEU d_ dXU QTfUbcU !, +] Y\\Y_Y] `QSd_V V_bUYW^ SebbU^Si V\eSdeQdY_^c Q^T Y^SbUQcUT bUfU^eUc' Ri Y^SbUQcUT] Qb[UdY^W Q^T dUSX^_\Wi S_cdc Qd dXU I RCSbY`dY_^ LYTU_ IUbfYSUc cUW] U^d Q^T Ri dXU QSaeYcYdY_^ V > C > 8 _[c Q^T CUTYQ) JXU Y] `QSd_V V_bUYW^ SebbU^Si V\eSdeQdY_^c _V dXU K)I) T_\\Qb QWQY^cd _SQ\ SebbU^SYUc bUce\dUT Y^ Q IU\\Y^W' WU^UbQ\ Q^T QT] Y^YcdbQdYfU Y^SbUQcU _V !-,] Y\\Y_^' b, " ' V_b dXU cYh] _^dXc U^TUT : USU] RUb .,' -+-, Qc S_] `QbUT d_ dXU S_bbUc`_^TY^W `UbY_T _V VYcSQ\ -+-,)

, *BLNB@F>PFKJ >JA > I KNPFV>PFKJ* o : U`bUSYQdY_^Q^TQ]_bdYjQdY_^Uh`U^cU Y^SbUQcUT !,]Y\\Y_^'_b, "'Q^T !-]Y\\Y_^'_b, "' V_b dXU dXbUU Q^T cYh]_^dXc U^TUT : USU] RUb .,'-+-,'bUc`USdYfU\i'Qc S_]`QbUT d_dXU S_bbUc`_^TY^W `UbY_Tc_V VYcSQ\-+-,) JXU Y] `QSd _V V_bUYW^ SebbU^Si V\eSdeQdY_^c _V dXU K)I) T_\\Qb QWQY^cd _SQ\ SebbU^SYUc bUce\dUT Y^ Q TU`bUSYQdY_^ Q^T Q] _bdYjQdY_^ Uh`U^cU Y^SbUQcU _V ^Y\ Q^T !.] Y\\Y_^' _b , "' V_b dXU dXbUU Q^T cYh]_^dXc U^TUT : USU] RUb .,' -+-,' bUc`USdYfU\i' Qc S_] `QbUT d_ dXU S_bbUc`_^TY^W `UbY_Tc _V YYcSQ\ -+-,)

 $\begin{array}{l} 11 L > FN IBJP > JA NBOPNQ@PQNFJD @E > NDBO \circ :ebY^W dXU dXbUU Q^T cYh] _^dXc U^TUT :USU] RUb .,'-+-,' dXU 9_] `Q^i bUS_bTUT bUcdbeSdebY^W SXQbWUc _V !-.] Y\\Y_^ Q^T !/O] Y\\Y_^' bUc`USdYfU\i) :ebY^W dXU dXbUU Q^T cYh] _^dXc U^TUT :USU] RUb .,'-+-+' dXU 9_] `Q^i bUS_bTUT bUcdbeSdebY^W SXQbWUc _V !-.] Y\\Y_^ Q^T !/O] Y\\Y_^ Q^T !1.] Y\\Y_^' bUc`USdYfU\i) IUU D_dU / o HUcdbeSdebY^W Fb_WbQ] c Y^ dXU QSS_] `Q^i Y^W 9_^c_YTQdUT <Y^Q^SYQ\ IdQdU] U^dc)$

- MQFPU HKOOBO KC >CCFHF>PBO o ; ae'di _ccUc _V QVVY\YQdUc Y^SbUQcUT Ri !.] Y\\Y_^ Q^T !-] Y\\Y_^ V_b dXU dXbUU Q^T cYh] _^dXc U^TUT : USU] RUb ., '-+-, 'bUc`USdYfU\i' Qc S_] `QbUT d_ dXU S_bbUc`_^TY^W `UbY_Tc _V VYcSQ\ -+-,) IUU D_dU O o ?^fUcd] U^dc Y^ dXU QSS_] `Q^iY^W 9_^c_\YTQdUT <Y^Q^SYQ\ IdQdU] U^dc)

1JPBNB0P BTLBJ0B" JBP o ?^dUbUcd Uh`U^cU' ^Ud Y^SbUQcUT Ri !4] Y\\Y_^ Q^T !-.] Y\\Y_^ V_b dXU dXbUU Q^T cYh] _^dXc U^TUT : USU] RUb ., '-+-, ' bUc`USdYfU\i'Qc S_] `QbUT d_ dXU S_bbUc`_^TY^W `UbY_Tc _V VYcSQ\ -+-, ' `bY] QbY\i TbYfU^ Ri dXU YcceQ^SU _V !, RY\\Y_^ V cU^Y_b ^_dUc Y^ dXU V_ebdX aeQbdUb _V VYcSQ\ -+-, \$dXU p-+-, IU^Y_b D_dUcq%)

 $\begin{array}{l} \textit{\textit{GPEBN''} JBP o EdXUb' ^Ud TUSbUQcUT Ri !1,] Y\\Y_ Q^T Y^SbUQcUT Ri !04] Y\\Y_ V_b dXU dXbUU Q^T cYh] _^dXc U^TUT : USU] RUb ., '-+-, ' bUc`USdYfU\i'Qc S_] `QbUT d_ dXU S_bbUc`_^TY^W `UbY_Tc _V YCSQ\ -+-,) IUU D_dU ,. o 7 TTYdY_Q\ <Y^Q^SYQ\ ?^V_b] QdY_ Y^ dXU QSS_] `Q^iY^W 9_^c_YTQdUT <Y^Q^SYQ\ IdQdU] U^dc) \\ \end{array}$

 $1J@KIBP>T BTLBJ0B o <_b dXU dXbUU] _^dXc U^TUT : USU] RUb ., '-+-, ' dXU 9_] `Q^i bUS_bTUT Y^S_] U dQh Uh`U^cU_V !44] Y\\Y_^ _^ bU(dQh Y^S_] U_V !.1,] Y\\Y_^ bUce\dY^W Y^ Q^ UVVUSdY fU dQh bQdU dXQd gQc XYWXUb dXQ^ dXU K)I) cdQded_bi dQh bQdU JXU dQh bQdU gQc Y] `QSdUT Ri V_bUYW^_` UbQdY_c gXYSX QbU ceRZUSd d_ XYWXUb dQh bQdUc Q^T Ri SXQ^WUc Y^ fQ\eQdY_ Q_gQ^SUc)$

 $<_b dXU cYh] _^dXc U^TUT : USU] RUb ., '-+-, ' dXU 9_] `Q^i bUS_bTUT Y^S_] U dQh Uh`U^cU_V !, 2+] Y\\Y_^ ^ `bU(dQh Y^S_] U_V ! 144] Y\\Y_^' bUce\dY^W Y^Q^ UVVUSdYfU dQh bQdU dXQd gQc XYWXUb dXQ^ dXU K)I) cdQded_bi dQh bQdU) JXU dQh bQdU gQc Y] `QSdUT Ri V_bUYW^ _`UbQdY_c gXYSX QbU ceRZUSd d_ XYWXUb dQh bQdUc Q^T SXQ^WUc Y^ fQ\eQdY_ Q_gQ^SUc' _VVcUd Ri dXU _gUb dQh Y] `QSd bU\QdUT d_ dXU QSaeYcYdY_ VQ^, 3 " Y^dUbUcd Y^ Fb_`Ubdi=ebe)$

<_b dXU dXbUU] _^dXc U^TUT : USU] RUb .,' -+-+' dXU 9_] `Q^i bUS_bTUT Y^S_] U dQh Uh`U^cU _V !30] Y\\Y_^ `bU(dQh Y^S_] U _V !./1] Y\\Y_^' bUce\dY^W Y^ Q^ UVVUSdYfU dQh bQdU dXQd gQc XYWXUb dXQ^ dXU K)I) cdQded_bi dQh bQdU) JXU XYWXUb dQh bQdU gQc `bY] QbY\i TeU d_ fQ\eQdY_^ Q_gQ^SUc RUY^W bUS_bTUT QWQY^cd dQh RU^UVYdc Y^ SUbdQY^ V_bUYW^ ZebYcTYSdY_^c gYdX _`UbQdY^W _ccUc Q^T dXU Y] `QSd _V V_bUYW^ `UbQdY_^c gXYSX QbU ceRZUSd d_ XYWXUb dQh bQdUc' _VVcUd Ri Q bU] UQcebU] U^d _V TUVUbbUT dQhUc Y^ dXU K)A)

 $<_b dXU cYh] _^dXc U^TUT : USU] RUb ., '-+-+' dXU 9_] `Q^i bUS_bTUT Y^S_] U dQh Uh`U^cU_V !, +] Y\\Y_^ ^ `bU(dQh Y^S_] U_V !/, 3] Y\\Y_^' bUcedY^W Y^Q 0 UVVUSdYfU dQh bQdU dXQd g Qc XYWXUb dXQ^ dXU K)I) cdQded_bi dQh bQdU) JXU XYWXUb dQh bQdU g Qc `bY] QbY\i TeU d_ fQ\eQdY_ Q_ g Q^SUc RUY^W bUS_bTUT QWQY^cd dQh RU^UVYdc Y^ SUbdQY^ V_bUYW^ ZebYcTYSdY_^c g YdX _`UbQdY^W _ccUc Q^T dXU Y] `QSd_V V_bUYW^ _`UbQdY_c g XYSX QbU ceRZUSd d_ XYWXUb dQh bQdUc' _VVcUd R i Q bU] UQcebU] U^d_V TUVUbbUT dQhUc Y^ dXU K)A)$

CQ^QWU] U^d QccUccUc QfQV\QR\U UfYTU^SU d_ TUdUb] Y^U gXUdXUb ceVVYSYU^d VedebU dQhQR\U Y^S_] U gY\\ RU WU^UbQdUT d_`Ub] Yd dXU

<_b dXU cYh] _^dXc U^TUT : USU] RUb ., ' -+- ,' bUfU^eUc Qd dXU IeRcSbY`dY_^ LYTU_ IUbfYSUc cUW] U^d Y^SbUQcUT !,] Y\\Y_^ Qc S_] `QbUT d_dXU S_bbUc`_^TY^W `UbY_T_V YICSQ\ -+- ,' Qc dXU !O-] Y\\Y_^ Y^SbUQcU Y^ cdbUQ] Y^W bUfU^eUc' `bY] QbY\i Vb_] AQi_ Q^T 18<64' dXU `_cYdYfU Y] `QSd_V V_bUYW^ SebbU^Si V\eSdeQdY_c Q^T XYWXUb QTfUbdYcY^W bUfU^eUc gUbU_WcUd Ri _gUb bUcYTU^dYQ\ ceRcSbY`dY_^ bUfU^eUc bUce\dY^W Vb_] VUg Ub bUcYTU^dYQ\ Rb_QTSQcd ceRcSbYRUbc Q^T dXU !3] Y\\Y_^ TUS\Y^U Y^ S_]] UbSYQ\ ceRcSbY`dY_^ bUfU^eUc TeU d_ bUSU^d 9 EL? : (,4 bU\QdUT bUcdbYSdY_c gYdXY^ SUbdQY^ cdQdUc Y^ 7 ecdbQ\YQ) <_hdU\ =b_e` cdbUQ] Y^W ceRcSbY`dY_^ bUfU^eUc bU`bUcU^dUT Q``b_hY] QdU\i ,4 " _V d_dQ\ SYbSe\QdY_^ Q^T ceRcSbY`dY_^ bUfU^eUc V_b cYh] _^dXc U^TUT : USU] RUb .,' -+- ,) JXU Y] `QSd_V V_bUYW^ SebbU^Si V\eSdeQdY_c _V dXU K)I) T_\\Qb QWQY^cd _SQ\ SebbU^SYUc bUce\dUT Y^ Q bUfU^eU Y^SbUQcU _V !,1] Y\\Y_^' _b , " 'V_b dXU cYh] _^dXc U^TUT : USU] RUb .,' -+- , Qc S_] `QbUT d_ dXU S_bbUc`_^TY^W `UbY_T _V YVcSQ\ -+- ,)

<_b dXU cYh] _^dXc U^TUT : USU] RUb . , ' -+- , ' IUW] U^d ; 8?J : 7 TUSbUQcUT !-] Y\\Y_^' _b , " ' Qc S_] `QbUT d_ dXU S_bbUc`_^TY^W `UbY_T _V VYcSQ\ -+- , ' `bY] QbY\i TeU d_ XYWXUb Y^fUcd] U^d c`U^TY^W _^ cdbUQ] Y^W `b_TeSdc'] QY^\i Y^] Qb[UdY^W' XYWXUb dUSX^__Wi S_cdc Q^T XYWXUb c`_bdc `b_WbQ]] Y^W bYWXdc S_cdc Y^ dXU SebbU^d `UbY_T TeU d_ dXU dY] Y^W _V ^_S_] `QbQR\U

	;_b dXU	; _b dXU dXbUU] _^dXc U^TUT 9USU] RUb . ,'				; _b dXU cih] _^dXc U^TUT 9USU] RUb . ,'			
	-+-,	-+-+	8 XQ^WU	'' 8XQ^WU	-+-,	-+-+	8 XQ^WU	'' 8XQ^WU	
\$Y^] Y\\Y_^c' UhSU`d "%			7 UddUb	o*\$ L _bcU%			7 UddUb	* \$ L _bc U%	
HUfU^eUc5									
9 YbSe\QdY_^ Q^T ceRcSbY`dY_^	! .01	! .,4	! .2	,- "	! 2+0	! 1.+	! 20	, - "	
7TfUbdYcY^W	,/,	,,0	- 1	"	,	,30	/1	-0 "	
EdXUb	, ,	, -	\$,%	\$3% "	,1	,2	\$,%	\$1% "	
I_dQ\ GUfU^eUc	0+3	//1	1-	,/ "	40-	3	,-+	,/ "	
E`UbQdY^W Uh`U^cUc	\$,41%	\$,44%		_ "	\$.4-%	\$.3/%	\$3%	\$-% "	
IU\\Y^W' WU^UbQ\ Q^T QT] Y^YcdbQdYfU	\$,13%	\$,.3%	\$.+%	\$% "	\$,%	\$-12%	\$0/%	\$-+% "	
HUW] U^d : 7>I 9 6	! ,//	! ,+4	! .0	"	!4	! ,3,	! 03	"	

<_b dXU dXbUU] _^dXc U^TUT : USU] RUb .,'-+-,' bUfU^eUc Qd dXU :_g @_^Uc cUW] U^d Y^SbUQcUT !1-] Y\\Y_^' _b ,/ " ' Qc S_] `QbUT d_ dXU S_bbUc`_^TY^W `UbY_T _V VYcSQ\ -+-,' `bY] QbY\i TbYfU^ Ri XYWXUb QTfUbdYcY^W bUfU^eUc' dXU Y^SbUQcU Y^ SYbSe\QdY_^ Q^T ceRcSbY`dY_^ bUfU^eUc Q^T dXU !,3] Y\\Y_^ Y] `QSd Vb_] dXU QSaeYcYdY_^ _V ?8 :) : YWYdQ\ bUfU^eUc Qd dXU :_g @_^Uc cUW] U^d bU`bUcU^dUT 2- " _V d_dQ\ bUfU^eUc V_b dXU dXbUU] _^dXc U^TUT : USU] RUb .,' -+-,' Qc S_] `QbUT d_ 2+ " Y^ dXU S_bbUc`_^TY^W `UbY_T _V VYcSQ\ -+-,) JXU Y] `QSd _V V_bUYW^ SebbU^Si V\eSdeQdY_^c _V dXU K)I) T_\\Qb QWQY^cd _SQ\ SebbU^SYUc bUce\dUT Y^ Q bUfU^eU TUSbUQcU _V !,] Y\\Y_^ V_b dXU dXbUU] _^dXc U^TUT : USU] RUb .,' -+-, Qc S_] `QbUT d_ dXU S_bbUc`_^TY^W `UbY_T _V VYcSQ\ -+-,)

 $<_b\ dXU\ cYh\]_^dXc\ U^TUT\ :\ USU\]\ RUb\ ., '-+-, '\ bUfU^eUc\ Qd\ dXU\ :_g\ @_^Uc\ cUW\]\ U^d\ Y^SbUQcUT\ !, -+\]\ Y/Y_^'_b\ , /\ "'\ Qc\ S_\]\ QbUT\ d_dXU\ S_bbUc\ _^TY^W\ UbY_T\ _V\ YicSQ\ -+-, '\ bY\]\ QbY\i\ TbYfU^Ri\ XYWXUb\ QTfUbdYcY^W\ bUfU^eUc\ dXU\ Y^SbUQcU\ Y^SYbSe\QdY_^Q^T\ ceRcSbY'\ dY_^bUfU^eUc\ Q^T\ dXU\ !.3\]\ Y/Y_^Y\]\ QSd\ Vb_\]\ dXU\ QSaeYcYdY_^U?8\ :\)\ :\ YWYdQ\ bUfU^eUc\ Qd\ dXU\ :_g\ @_^Uc\ cUW\]\ U^d\ bU'bUcU^dUT\ 2.\ "\ _V\ d_dQ\ bUfU^eUc\ V_b\ dXU\ cYh\]\ _^dXc\ U^TUT\ :\ USU\]\ RUb\ ., '-+-,$

-+-+ V_b cU\USd`eR\YSQdY_^c Q^T V_b Q\\ S_^ce] Ub ceRcSbY`dY_^ `b_TeSdc)^{\$Q_6}

	;_b (;_b dXU dXbUU]_^dXc U^TUT 9USU] RUb ., ^{\$R\$} ,					
	-+-,	-+-, -+-+ 8XQ^WU		" 8XQ^WU			
\$Y^ dX_ecQ^Tc'UhSU`d "%			7 UddUb*\$ L _bcU%				
BNK EGRR AZXKKZ 9U[XTGR							
: YWYdQ\(_^\i ceRcSbY`dY_^c ^{\$S%}	-'4,3	-'/1-	/01	,4 "			
$J_dQ \ ceRcSby`dy_c$.'1,3	.'/	.4/	,- "			
$8 \text{Qbb}^rc = b_e^{ST_b}$							
: YWYdQ\(_^\i ceRcSbY`dY_^c ^{\$S%}	202	044	,03	-1 "			
$J_dQ \ ceRcSby`dy_c$	41.	3+4	,0/	,4 "			
$J_dQ 9_ce] Ub^{SU_{5}}$							
: YWYdQ\(_^\i ceRcSbY`dY_^c ^{\$S%}	. '22/	. '+1,	2,.	"			
J_dQ\ ceRcSbY`dY_^c	/'2+2	/'+	12/	,2 "			

 PPPPPPPPPPPPPPPPP

 \$Q%
 8 QcUT _^ Y^dUb^Q\ TQdQ V_b dXU `UbY_Tc Vb_]
 IU`dU] RUb -2' -+-, dXb_eWX : USU] RUb -1' -+-, Q^T IU`dU] RUb -3' -+-+

*KKG 7Q?#POEFJD \$-- "_V dXU 9_] `Q^irc S_^c_\YTQdUT bUfU^eUc Y^ R_dX dXU cYh]_^dXc U^TUT : USU] RUb ., '-+-, Q^T -+-+%

	; _b dXU dXbUU] _^dXc U^TUT 9USU] RUb . ,'				;_b dXl	; _b dXU cYh] _^dXc U^TUT 9USU] RUb . ,'			
	-+-,	•+•+	8 XQ^WU	'' 8 X Q^WU	-+-,	-+-+	8 XQ^WU	'' 8XQ^WU	
\$Y^] Y\\Y_^c' UhSU`d "%			7 UddUb	* \$ L _bc U%			7 UddUb	* \$ L _bc U%	
HUfU^eUc5									
9_^ce]Ub	! 04/	! 0	! 2,	,/ "	!,',,3	! 41/	! ,0/	,1 "	
EdXUb		-,		,+ "	/0	.3	2	,3 "	
I_dQ\ GUfU^eUc	1,2	0//	2.	,. "	,',1.	,'++-	,1,	,1 "	
E`UbQdY^W Uh`U^cUc	\$/,,%	\$./2%	\$1/%	\$,3% "	\$223%	\$10,%	\$,-2%	\$-+% "	
IU\\Y^W' WU^UbQ\ Q^T QT] Y^YcdbQdYfU	\$44%	\$4.%	\$1%	\$1% "	\$,4.%	\$,21%	\$,2%	\$,+% "	
HUW] U^d : 7>I 96	! ,+2	! ,+/	! .	. "	! ,4-	! ,20	! ,2	,+ "	

<_b dXU dXbUU] _^dXc U^TUT : USU] RUb .,' -+- ,' bUfU^eUc Qd dXU 8__ [FeR\YcXY^W cUW] U^d Y^SbUQcUT !2.] Y\\Y_^'_b ,. "' Qc S_] `QbUT d_ dXU S_bbUc`_^TY^W `UbY_T _V YYcSQ\ -+- ,' `bY] Qb\\i TbYfU^ Ri dXU !O+] Y\\Y_^S_^dbYRedY_^ Vb_] dXU QSaeYcYdY_^ V > C > 8_ [c Q^T CUTYQ Y^ dXU V_ebdX aeQbdUb _V YYcSQ\ -+- , Q^T XYWXUb bUfU^eUc Y^ dXU = U^UbQ\ 8_ [c SQdUW_bi' gXYSX RU^UVYdUT Vb_] bLXU QCuc _V B J KRbKIDTJ\G 7GHL Ri =Qbi LQi^QUbSXe [TBNK >QUTKKX \neq U § GT\ 2 UUQY/ A [VKX 4GY_! Ri HUU : be]]_^T Q%F% BNK AZUX_ZKRKX Ri : QfU = b_X\) JXU Y^SbUQcU gQc Q\c_ TbYfU^ Ri Y^SbUQcUT R_ [cQ\Uc Y^ dXU K)A) Q^T Y^SbUQcUT 9XbYcdYQ^ FeR\YcXY^W cQ\Uc TbYfU^ Ri dXU _^W_Y^W bUS_fUbi _V SUbdQY^ TYcdbYRedY_^ SXQ^^U\c Vb_] 9EL? : (,4' `QbdYQ\\i _VVcUd Ri _gUb 9XY\TbU^rc = b_e` cQ\Uc) : YWYdQ\ cQ\Uc Y^SbUQcUT Ri 3 " Qc S_] `QbUT d_ dXU S_bbUc`_^TY^W `UbY_T _V VYcSQ\ -+- , TeU d_ Wb_gdX Y^ T_g^_QTQR\U QeTY_R_ [c) : YWYdQ\ cQ\Uc bU` bUcU^dUT Q``b_hY] QdU\i ,2 " _V S_ce] Ub bUfU^eUc TebY^W dXU dXbUU]_^dXc U^TUT : USU] RUb .,' -+-,) JXU Y] `QSd_V V_bUYY Sebb X U E %%%

5BS0 4BAF> \$-/"_V dXU 9_]`Q^irc S_^c_\YTQdUT bUfU^eUc Y^ R_dX dXU cYh]_^dXc U^TUT : USU] RUb .,' -+-, Q^T -+-+%								
	; _b dXU dXbUU] _^dXc U^TUT 9USU] RUb . ,'			; _b dXU cYh] _^dXc U^TUT 9USU] RUb . ,'				
	-+-,	-+-+	8 XQ^WU	'' 8XQ^WU	-+-,	-+-+	8 XQ^WU	'' 8XQ^WU
\$Y^] Y\\Y_^c' UhSU`d "%			7 UddUb*	L_bcU%			7 UddUb	*\$ L _bcU%
HUfU^eUc5								
9 YbSe\QdY_^ Q^T ceRcSbY`dY_^	! -3+	! -02	!					

: $ebY^W dXU cYh] _^dXc U^TUT : USU] RUb ., '-+-+' dXU 9_] `Q^i bU`QYT !-/3] Y\\Y_^ V R_bb_g Y^Wc bU\QdUT d_ <hdU\Q^T] QTU TYfYTU^T `Qi] U^dc _V !3+] Y\\Y_^ d_ DU gc 9_b`_bQdY_ cd_S[X_\TUbc Q^T H; 7 = b_e`] Y^_bYd i cd_S[X_\TUbc) JXU ^Ud SQcX ecUT Y^ VY_Q^SY^W QSdY FYdYUc V_b dXU cYh] _^dXc U^TUT : USU] RUb ., '-+-+ gQc `QbdYQ\\i _VVcUd Ri ^U g R_bb_gY^Wc bU\QdUT d_ <hdU _V !, /1] Y\\Y_^)$

8B@KJ@FHF>PFKJ KC . NBB +>0E . HKS) R>FH>?HB PK 5BS0 +KNLKN>PFKJ

JXU 9] `Q^i S_^cYTUbc VbUU SQcX V_g QfQV\QR\U d_ DUgc 9_b`_bQdY_^ d_ `b_fYTU ecUVe\ Y^; Q ^ S U d_ gXU^T

<K]Y 2UXV 1UXXU]0TMY

7 c _V : USU] RUb . , ' -+- , ' dXU 9_] `Q^i XQT R_bb_g Y^Wc _V !431] Y\\Y_^' g XYSX S_^cYcdUT _V dXU SQbbiY^W fQ\eU _V Ydc -+- , IU^Y_b D_dUc)

5U^ZKR 6XU[V 1UXXU]0TMY

7 c _V : USU] RUb . , ' -+- ,

`UbQdY^c) JXU 9_] `Q^irc S_]] Yd] U^dc Qc _V : USU] RUb . ,' -+- , XQ fU ^_d SXQ^WUT cYW^YYYSQ^d\i Vb_] dXU TYcS_cebUc Y^S\eTUT Y^ dXU -+- , <_b] ,+(A)

+KJPFJDBJ@FB0

JXU 9_] `Q^i b_edY^U\i Yc Y^f_\fUT Y^ fQbY_ec \UWQ\ `b_SUUTY^Wc' S\QY] c Q^T W_fUb^] U^dQ\ Y^c `USdY_^c _b Y^fUcdYWQdY_^c' Y^S\eTY^W dX_cU TYcSeccUT Y^ D_dU , + d_dXU 9_^c_\YTQdUT $\leq Y^Q^SYQ$ \ IdQdU] U^dc) JXU _edS_] U _V dXUcU] QddUbc Q^T S\QY] c Yc

>I:B,)A:<6AEGD8::9>C<H

IUU D_dU ,+ o 9_]] Yd] U^dc Q^T 9_^dY^WU^SYUc Y^ dXU QSS_] `Q^iY^W 9_^c_\YTQdUT <Y^Q^SYQ\ IdQdU] U^dc)

>I:B ,6) G>H@ ;68 IDGH

J XUbU XQ fU RUU^ _] QdUbYQ\ SXQ^WUc d_ dXU bYc [VQSd_bc TUcSbYRUT Y^ dXU -+- , <_b] ,+(A' UhSU`d Qc cUd V_bdX RU_g5

: EB +KIL>JU 8BHFBO KJ 5BPSKNG >JA 1JCKN I >PFKJ 9UOPB I 0 >JA 6PEBN : B@EJKHKDU = EKOB . >FHQNB KN 4FOQOB +KQHA +>QOB > , fonqlpfkj kc 9bnrf@bo kn 3koo" 1 I lnklbn) @@boo pk kn , fo@hkoqnb kc 7bnokj>h , >p>" *Qofjboo 1jCkn I >pfkj" 1j@hqAfjd 1jPbhhB@pq>h 7nklbnpu" kn 6pEbn +KjCfAbjpf>h 1jCkn I >pfkj" 8boqhpfjd fj 1j@nb>oba +kopo" 3koo kc 8brbjqb" 8blqp>pfkj>h , >I >db kn 6pEbn 0 >n I pk pEb +KIL>jUY0 *Qofjboo\$

DUdg_b[Q^T Y^V_b]Q4Y_cicdU]cQ^T_dXUb dUSX^__WYUc'Y^S\eTY^W dX_cU bU\QdUT d_dXU 9_]`Q^irc S_^dU^d TU\YfUbi ^Udg_b[cQ^T ~Udg_b[]Q^WU]U^d 'QbU Y]`_bdQ^d d_ Ydc RecY^Ucc QSdYfYdYUcQ^T S_^dQY^dXU 9_]`Q^irc`b_`bYUdQbi'S_^VYTU^dYQ\Q^T cU^cYdYfU RecY^UccY^Lb]Q4Y_'Y^S\eTY^W `Ubc_^Q\TQdQ_V Ydc Secd_]UbcQ^T `Ubc_^U)JXU 9_]`Q^i cC_bU\YUc_^dXYbT(`Qbdi`b_fYTUbcV_bSUbdQY^dUSX^_\WiQ^T pS_eT(RQcUTq cicdU]cQ^T cUbfYSUcdXQd ce``_bdQ fQbYUdi_V RecY^Ucc_`UbQ4Y_cc)?^ @Q^eQbi -+--'dXU 9_]`Q^i TYcS_fUbUT dXQd_U V dXUcU cicdU]c gQc dXU dQbWUd_V`UbcYcdU^d SiRUbQddQS[QSdYfYdi)J_WUdXUb gYdX Q^_edcYTU SiRUbcUSebYdi YYb]'dXU 9_]`Q^i Yc S_^TESdY^W Q^Y^fUcdYWQdY_^Y^d_dXU SYbSe]cdQ^SUc_V dXU QSdYfYdi d_TUdUb]Y^U Ydc ^QdebU'cS_`U'TebQdY_Q^T Y]`QSdc)JXU 9_]`Q^irc`bU\Y]Y^Qbi Q^Q\icYc Y^TYSQdUc dXQd v_bUYW^W_fUb^]U^d Y^f_[fU]U^d]Qi RU Qcc_SYQdUT gYdX dXYc QSdYfYdi'Q^T dXQd TQdQ gQc dQ[U^)J_dXU 9_]`Q^irc[^g\UTWU'Ydc cicdU]cX_ecY^W Secd_]Ub Q^T Y^Q^SYQ\TQdQ gUbU^_d QVUSdUT)JXU 9_]`Q^i Yc bu]UTYQdY^W dXU YcceU'Q^T d_TQdU XQc ^_d Uh`UbYU^SUT Q^i bU\QdUT Y^dUbbe`dY_c d_Ydc RecY^Ucc_`UbQdY_c_bcicdU]c) 8QcUT_^Ydc Y^fUcdYWQdY_d_TQdU'dXU 9_]`Q^i RU\YUfUc dXU QSdYfYdi Yc S_^dQY^UT)7d dXYc dY]U'dXU 9_]`Q^i Yc e^QR\U d_UcdY]QdU dXU Uh`U^cUc Yd gY\\Y^Seb Y^S_^USdY_a gYdX Ydc Y^fUcdYWQdY_^Q^T bU]UTYQdY_^UW_bdc)

DUdg_b[Q^T Y^V_b]Qdy_cicdU] c(bU\QdUT UfU^dc QVVUSdY^W dXU 9_] `Q^irc cicdU] c'_b dX_cU_V dX'bT `QbdYUc e`_ gX'SX dXU 9_] `Q^irc RecY^Ucc bU\YUc' ceSX Qc S_] `edUb S_] `b_] YcUc' SiRUb dXbUQdc Q^T QddQS[c' S_] `edUb fYbecUc' g_b] c_b_dXUb TUcdbeSd'fU_b TYcbe`d'fU c_VdgQbU' `b_SUcc RbUQ[T_g^c' bQ^c_] gQbU Q^T TU^YQ_V cUbfYSU QddQS[c']Q\YSY_ec c_SYQ\ U^WY^UUbY^W _b_dXUb]Q\YSY_ec QSd'fYdYUc Ri Y^TYfYTeQ\c_b cdQdU(c`_^c_bUT_b_dXUb Wb_e`c'_bQ^i S_] RY^QdY_^ V dXU V_bUW_Y^W' Qc gU\\Qc `_gUb Q^T Y^dUb^Ud_edQWUc' UaeY`]U^d VQY\ebU' ^QdebQ\ TYcQcdUbc' YS\eTY^W UhdbU]U gUQdXUb gXYSX]Qi_SSeb g'dX Y^SbUQcY^W VbUaeU^Si Q^T Y^dU^cYdiW' dUbb_bYcd QSd'fYdYUc' gQb' Xe]Q^_bdUSX^__WSQ\ Ubb_b_b]Q\VUQcQ^SU dXQd]Qi QWUSd ceSX cicdU]c' S_e\T bUce\d Y^ TYcbe' d'_^ V dXU 9_] `Q^irc cUbfYSUc Q^T RecY^Ucc Q^T*_b _cc' S_bbe' d'_'Y] `b_`Ub QSSUcc d__b TYcS_cebU_V `Ubc_^Q\ TQdQ' RecY^Ucc Y^V_b]Qd'_'YS\eTY^W Y^dU\\USdeQ\ `b_`Ubdi' b_dXUb S_^VYTU^dYQ\ Y^V_b]Qd'_^ Y_bUdYLC]Qi Q(c_VbQeTe\U^d\i Y^TESU dXU 9_] `Q^irc U] `_iUUc_b_dXUb QWU^dc d_TYcS_cU cU^CYdYfU b_S_VYTU^dYQ\ Y^V_b]Qd'_ Y^_bTUb d_ WQY^ QSSUcc d_dXU 9_] `Q^irc cicdU]c' VQSY\YdYUc_b TQdQ' bdX_cU_V dXYbT `QbdYUc g'dX gX_] dXU 9_] `Q^i T_Uc RecY^Ucc)?^ QTTYdY_' Q^i TUcYW^_b]QdY_ CUSebYdi) I icdU] bUTe^TQ^Si]Qi RU Y^UVUSdYfU _b Y^QUU Q^T dXU 9_] `Q^irc TYcQdUb $VD_{C}^{1} CU Y^V_{D}]QdY_ cUSebYdi) I icdU] bUTe^TQ^Si]Qi RU Y^UVUSdYfU _b Y^QUT aQU' A dXU 9_] `Q^irc TYcQcdUb$ $bUS_fUbi Q^T RecY^Ucc S_dY^PYdi' `Q^AYAY]Qi ^d RU CeVYSYU^d d_QTTbUcc Q\\`_dU^dYQ SiRUb UfU^dc b_dXUb TYcbe`dY_cc)$

?^ bUSU^d i UQbc' dXUbU XQc RUU^ Q cYW^YYYSQ^d bYcU Y^ dXU ^e] RUb _V Si RUbQddQS[c _^ S_] `Q^YUcr ^Udg_b[Q^T Y^V_b] QdY_^ cicdU] c' Q^T ceSX QddQS[c QbU RUS_] Y^W Y^SbUQcY^W\i]_bU c_`XYcdYSQdUT' dQbWUdUT Q^T TYVVYSe\d d_ TUdUSd Q^T `bUfU^d QWQY^cd) 7 c Q bUce\d _V dXU 9 EL?: (,4 `Q^TU] YS' bU] _dU g_b[Q^T bU] _dU QSSUcc d_ dXU 9_] `Q^irc cicdU] c XQc Y^SbUQcUT cYW^YYYSQ^d\i' g XYSX] Qi QTfUbcU\i Y] `QSd dXU UVVUSdYfU^Ucc _V dXU 9_] `Q^irc cUSebYdi] UQcebUc) 9_^cUaeU^d\i' dXU bYc[c Qcc_SYQdUT gYdX ceSX Q^ UfU^d S_^dY^eU d_ Y^SbUQcU' `QbdYSe\Qb\i Qc dXU 9_] `Q^irc TYWYdQ\ RecY^UccUc Uh`Q^T) JXU 9_] `Q^i XQc Uh`UbYU^SUT' Q^T Uh`USdc d_ S_^dY^eU d_ RU ceRZUSd d_' SIRUbcUSebYdi dXbUQdc Q^T QSdYfYdi) JXUbU Yc ^_ QccebQ^SU dXQd SIRUbcUSebYdi dXbUQdc _b QSdYfYdi ceSX Qc dXQd TYcS_fUbUT Y^ @Q^eQbi -+-- gY\\ ^_d XQfU Q] QdUbYQ\ QTfUbcU UVVUSd Y^ dXU VedebU) 9_e^dUb] UQcebUc dXQd dXU 9_] `Q^i Q^T Ydc fU^T_bc XQfU TUfU_`UT Q^T Y] `\U] U^dUT d_ `b_dUSd `Ubc_^Q\ TQdQ' RecY^Ucc Y^V_b] QdY_^' Y^S\eTY^W Y^dU\\USdeQ\ `b_`Ubdi' Q^T _dXUb S_^VYTU^dYQ\ Y^V_b] QdY_^' d_ `bUfU^d cicdU] TYcbe`dY_^' TQdQ _cc _b S_bbe`dY_^' Q^T d_ `bUfU^d _b TUdUSd cUSebYdi RbUQSXUc] Qi ^_d RU ceSSUccVe\ Y^ `bUfU^dY^W dXUcU UfU^dc' `QbdYSe\Qb\i WYfU^ dXQd dUSX^YaeUc ecUT d_ QSSUcc' TYcQR\U _b TUWbQTU cUbfYSU' _b cQR_dQWU cicdU] c SXQ^WU VbUaeU^d\i) 7 TTYdY_^Q\\i' Yd] Qi RU TYVYSe\d d_ TUdUSd Q^T TUVU^T QWQY^cd SUbdQY^ dXbUQdc Q^T fe\^UbQRY\YdYUc dXQd SQ^ `UbcYcd _fUb UhdU^TUT `UbY_Tc _V dY] U) 7^i ^Udg_b[Q^T Y^V_b] QdY_^ cicdU] c(bU\QdUT UfU^dc S_e\T bUaeYbU dXU 9_]`Q^i d_Uh`U^T cYW^YYSQ^d bUc_ebSUc d_bU]UTi ceSX UfU^d) C_bU_fUb' dXU TUfU_`]U^d Q^T]QY^dU^Q^SU_V dXUcU] UQcebUc Yc S_cd\i Q^T bUaeYbUc _^W_Y^W] _^Yd_bY^W Q^T e`TQdY^W Qc dUSX^__WYUc SXQ^WU Q^T UVV_bdc d_ _fUbS_] U cUSebYdi] UQcebUc RUS_] U]_bU c_`XYcdYSQdUT) MXY\U dXU 9_]`Q^i] QY^dQY^c SiRUb bYc[Y^cebQ^SU' dXYc Y^cebQ^SU] Qi ^_d RU ceVYYSYU^d d_S_fUb Q\\ _ccUc Vb_] Q^i RbUQSXUc V dXU 9_] `Q^irc cicdU] c Q^T T_Uc ^_d UhdU^T d_ bU`edQdY_Q\ TQ] QWU _b S_cdc Y^SebbUT d_ Y] `b_fU_b cdbU^WdXU^ cicdU] c QWQY^cd VedebU dXbUQdc _b QSdYfYdi) 9 iRUb bYc[Y^cebQ^SU XQc Q\c_RUS_] U]_bU TYVYYSe\d Q^T

 $\begin{array}{l} Uh^Uc'fUd_RdQY^{0} Q^T dXU 9_]^{0} & Q^i SQ^{-} dRU SUbdQY^{0} dXQd Ydc SebbU^d \\ UfU V Y^cebQ^SU_b dXU RbUQTdX_V Ydc dUb] c Q^T \\ S_TYdY_c gYV S_dY^eU d_RU QfQYVQRVU_US__] YSQVVi bUQc_QRVU dUb] c \\ \end{array}$

7 cYW^YYSQ^d VQY\ebU'S_]`b_]YcU' RbUQSX_b Y^dUbbe`dY_^ V dXU 9_]`Q^irc cicdU]c'_b dX_cU_V dXYbT `QbdYUc e`_^ gXYSX Ydc RecY^Ucc bU\YUc'S_e\T bUce\d Y^ Q TYcbe`dY_^ V Ydc _`UbQdY_c' Y^S\eTY^W TUWbQTQdY__b TYcbe`dY_ V cUbfYSU'UaeY`]U^d TQ]QWU' Secd_]Ub'QeTYU^SU_bQTfUbdYcUb TYccQdYcVQSdY_'TQ]QWU d_Ydc bU`edQdY_b RbQ^Tc' bUWe\Qd_bi Y^fUcdYWQdY_c Q^T U^V_bSU]U^d QSdY_c' \Qg ceYdc' bU]UTYQdY_S_cdc'Q_cc_V_bY^QRY\Ydi d_QddbQSd ^Ug Secd_]Ubc'QeTYU^SU'QTfUbdYcUbc_b RecY^Ucc `Qbd^Ubc_b _cc_V bUfU^eUc Q^T_dXUb WY^QSYQ_ccUc) ?V Q^i ceSX VQY\ebU'S_]`b_]YcU' RbUQSX' Y^dUbbe`dY__bc']Y\Qb UfU^d bUce\dc Y^ Y]`b_`Ub QSSUcc d_b TYcS_cebU_V Y^V_b]QdY_1QY^UT Y^ dXU 9_]`Q^irc Y^V_b]QdY_cicdU]c Q^T T dUg_b[c_b dX_cU_V Ydc fU^T_bc' Y^S\eTY^W WY^QSYQ\' `Ubc_^Q\Q^T SbUTYd SQbT TQdQ'Qc gU\\Qc S_VYTU^dVQ\Q^T `b_`bYUdDi Y^V_b]QdY_bU\QdY^W d_ `Ubc_^U'Y S\eTY^W WY^QSYQ\' `Ubc_QQ QT SbUTYd SQbT TQdQ'Qc gU\\Qc S_VYTU^dVQ\Q^T `b_`bUbdVi Y^V_b]QdY_C C^T bUVQ\QdYW d_ `Ubc_^VU'Secd_]Ubc' fU^T_bc Q^T dXU 9_]`Q^irc RecY^Ucc' YS\eTY^W Ydc Y^dU\\USdeQ\`b_`Ubdi' dXU 9_]`Q^i s_e\T Q\c_ RU ceRZUSd d_\YQR\Ydi e^TUb bU\UfQ^d S_dbQSdeQ_R\YWQ4'_c Q^T \Qg cQ T bUWe\QdY_c `b_dUSdYW` Ubc__Q\ TQdQ QT `b'fQSi' Qc gU\\ Qc `bYfQdU Y^TYfYTEQ_b S\Qcc QSdY_^\Qg ceYdc) JXU 9_]`Q^i i Q(c_RU bUaeYbUT d_^dYV SUbdQY^W_fUb^]U^dQ\QWU^SYUc Q^T*_b bUWe\Qd_bc \$Y^S\eTY^W dXU Q``b_bYQdU ;K ce`UbfYc_bi QedX_bYdi & QR_ed Q^i QSdeQ_b`UbSUYfUT TQdQ cUSebYdi RbUQSX' Qc gU\\Qc dXU Y^TYfYTEQ\c gX_QbU QVUUSdUT Ri Q^i ceSX RbUQSX' gYdXY^ cdbYSd dY]U`UbY_Tc) ?^ QTTYdY_^' JUTYQ_b_dXUb bU`_bdc_V`UbSUYfUT cUSebYdi fe\^UbQRY\YdYUC Y^ dXU 9_]`Q^irc cicdU]c_bdXU 9_]`Q^irc RbQ^T Q^T bU`edQdY_ Q^T J] QdUbYQ\\i QVVUSd Ydc RecY^Ucc' bUce\dc_V_`UbQdY_^C Q^T VY_Q^SYQ\S_TYdY_^

IQ**R**\U_V **8**_^dU^dc

>I:B 1):M=>7>IH

\$Q% ; hXYRYdc)

- -), $\frac{7 \text{] U^TUT Q^T HUcdQdUT < EN IFEHJI JbQTU CQb[BYSU^cU 7 WbUU] U^d' TQdUT Qc V ESd RUb --' -+- ,' RUd gUU^ < h}{CUTYQ BB9 Q^T < h I^bdc 7 ecdbQ\YQ Fdi BY] YdUT)&}$
- -). 7] U^TUT Q^T HUcdQdUT < hdu\ JbQTU CQb[BYSU^cU 7 WbUU] U^d' TQdUT Qc V ESd RUb --' -+- ,' RUd g UU^ < h CUTYQ BB9 Q^T < hdu\ CQ^QWU] U^d Fdi BdT)&
- -)/ $\frac{7 | U^{T}UT Q^{T} HUcdQdUT < EN JbQTU CQb[BYSU^{U} 7 WbUU] U^{d} TQdUT Qc V ESd RUb --' -+-, 'RUdgUU^{A} + CUTYQ BB9 Q^{T} < hdU CQ^{QWU } U^{d} Fdi BY] YdUT&k$
- ,+), $\frac{7] U^{T}] U^{d} D), TQdUT Qc V D fU] RUb , 1' -+-, d dXU 9bUTYd 7WbUU] U^{d} TQdUT Qc V : USU] RUb , -' -+, 4' Q] ^W DUgc 9 b bQdY ^ Qc R bb gUb' dXU cUfUbQ RQ^[c Q^T dXUb VY^Q^SYQ Y^cdYdedY ^ b U^dYdYUc Vb] dY] U d dY] U `QbdYUc dXUb VY^Q^SYQ Y^cdYdedY ^ b U^dYdYUc Vb] dY] U d dY] U `QbdYUc dXUb VY^Q^SYQ Y^cdYdedY ^ c b U^dYdYUc Vb] dY] U d dY] U `QbdYUc dXUb VY^Q^SYQ Y^cdYdedY ^ c dXU 9bUTYd 7WbUU] U^d' @FC bWQ^ 9XQcU 8Q^[' D)7) Qc QT] Y^YcdbQdYfU QWU^d' Q^T dXU dXUb `QbdYUc dXUbUd)&$
- .,), <u>9XYUV ; hUSedYfU EVVYSUb 9UbdYVYSQdY ^ bUaeYbUT Ri He\Uc , .Q(, / Q^T ,OT(, / e^TUb dXU IUSebYdYUc ; hSXQ^WU 7Sd V ,4. /' Qc Q] U^TUT)&</u>
- $(.,) \frac{9 XYUV < Y^Q^SYQ EVVYSUb 9 UbdYVYSQdY ^ bUaeYbUT Ri He Uc, Q(, / Q^T, OT(, / e^TUb dXU IUSebYdYUc; hSXQ^WU 7 Sd_V, (4. / ' Qc Q] U^TUT) & (4. / ' Qc Q] U^TUT) \\$
- .-), <u>9UbdYVYSQdY ^ V 9XYUV ; hUSedYfU EVVYSUb Q^T 9XYUV <Y^Q^SYQ\ EVVYSUb `ebceQ^d d _,3 K)I)9) IUSdY ^ ,.0+' Qc QT `dUT `ebceQ^d d _ IUSdY ^ 4+1 _V dXU IQbRQ^Uc Eh\Ui 7Sd _V -++-)&&</u>
- ,+, JXU V__gY^W VY^Q^SYQ\ Y^V_b] QdY_^ Vb_] dXU 9_] `Q^irc GeQbdUb\i HU`_bd_^ <_b] ,+(G V_b dXU aeQbdUb U^TUT : USU] RUb .,' -+- , V_b] QddUT Y^ ?^\Y^U N 8 HB5 \$YW 9_^c_\YTQdUT IdQdU] U^dc_V E `UbQdY_c V_b dXU dXbUU Q^T cYh] _^dXc U^TUT : USU] RUb .,' -+- , Q^T -+-+ $e^QeTYdUTW6$ \$YYW 9_^c_\YTQdUT IdQdU] U^dc_V 9_] `bUXU^cYfU ?^S_] U V_b dXU dXbUU Q^T cYh] _^dXc U^TUT : USU] RUb .,' -+- , Q^T -+-+ $e^QeTYdUTW6$ \$YYW 9_^c_\YTQdUT IdQdU] U^dc_V 9_] `bUXU^cYfU ?^S_] U V_b dXU dXbUU Q^T cYh] _^dXc U^TUT : USU] RUb .,' -+- , Q^T -+-+ $e^QeTYdUTW6$ \$YFW 9_^c_\YTQdUT BQQ^SU IXUUdc Qc_V : USU] RUb .,' -+- , $Q^T -+-+$, $e^QeTYdUTW6$ \$YFW 9_^c_\YTQdUT IdQdU] U^dc_V 9QcX <_g c V_b dXU cYh] _^dXc U^TUT : USU] RUb .,' -+- , Q^T -+-+ \$e^QeTYdUT%6 Q^T \$fW D_dUc d_ dXU K^QeTYdUT 9_^c_\YTQdUT </pre>
- ,+/ JXU S_fUb `QWU Vb_] DUgc 9_b`_bQdY_^rc GeQbdUb\i HU`_bd _^ <_b],+(G V_b dXU aeQbdUb U^TUT : USU] RUb .,' -+-,' V_b] QddUT Y^ ?^\Y^U N8HB \$Y^S\eTUT Qc ; hXYRYd ,+,%)&
- & <Y\UT XUbU g YdX)
- && <eb^YcXUT XUbU g YdX
- $k = 9 UbdQY^ `_bdY_^c UhXYRYd XQfU RUU^] YddUT `ebceQ^d d ?dU] 1+, R, +% V HUWe\QdY^ I(A)$

H>< C6IJG:

FebceQ^d d_ dXU bUaeYbU] U^dc _V dXU IUSebYdYUc ;hSXQ^WU 7Sd _V ,4./' dXU bUWYcdbQ^d XQc Te\i SQecUT dXYc bU`_bd d_ RU cYW^UT _^Ydc RUXQ\V Ri dXU e^TUbcYW^UT dXUbUe^d_ Te\i QedX_bYjUT)

D; MI 9EHFEH7J?ED \$HUWYcdbQ^d%

8 i5 *c* IecQ^ FQ^eSSY_ IecQ^ FQ^eSSY_ 9XYUV <Y^Q^SYQ\ EVVYSUb

:QdU5 <URbeQb b Q d