

Attitude face au risque & Sciences économiques

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n° 2014-02



**Les
Regards**
sur la sécurité
industrielle



FONCSI
Fondation pour une culture
de sécurité industrielle

> 8a` VSf[a` bagd g` WUj`fgdWWeAŁgd[fA` Vgefd[W`W8a` Ue[fVf g` W8a` VSf[a` WDVZ
UZVUZVdVba` `gVW gf[fFÁ bgT`cgWbSd VÁUWV W VSFWg` Shd` ^ ž>S 8a` Ue[X` S` UW
VVe bca VVe VVdVZVdVZVSGfagd VVe SUR[hfÁe` 1 d[ecgVWV eagZS[fVWShad[eVd` ^aghVdfgdVWV` WV[SZ
`aYgVWVfdVWV eV` T`WVVe SURVgd/SV` [` [efcSf[a` d` SaaU[Sf[a` d` La` VUf[hfÁe` Ácg[bVVe VVdVZVdVZVW
VfdVbd[eVd` adYS` [eSf[a` eek` V[LSVd` VUZ

>ad[Y` S[fÁ VVeS VÁ` SdVZVdVbaeVgd` ^` fVd[eU]b`f` Sd[fÁ VVeVd`fdShSgj` f` W` 8dS` UWW` ^` fVd` SZ
f[a` S`S` e[cgVgddeSha`a` fÁ SXd` ÁW` [` ` ahVdVfV S` f[U]bVd` VVeWVg] VVWV` S` ž

>S 8a` Ue[eVf Xj` ÁcgSfdW` [ee[a` e,

8S[dMÁ` VdVd` VVe` aghV`VVe[VÁVd`Vf` VVe bcdSf[cgVd` [` ` ahS` fVd`
6ÁhVabbVd` eagfW[dVf X` S` Uvd` SdVZVdVZVW
5a` fd[TgVd` ^` VeadVg` WUa` _` g` SgfÁ VVdVZVdVZVW
DVVdVdVUWVd`T` VVe` VVe` Ua` ` S[eeS` UVe` ^` WVeV` T`WVg` bgT`f`U

>S Ua` _` g` SgfÁ Sgfagd VWS eAŁgd[fA` Vgefd[W`WVf` egd` ŠŠŠ?wEt tz?, .xž

DWVWVZhagegd` VefW` V` bSd[fU]bSf[XVWS 8a` VSf[a` Vf` ,

6ÁUghdW` VVfÁ`ÁUZSdVW` YdSfg[fW` Wf` ^`W eV` T`WVVe`bgT`f`[USf[a` e, 5SZ[VdVWVSeAŁgd[fA`
[` Vgefd[W`W/DVWScVd`
BSdSfVW` VVe` [` Xad` Sf[a` e` SbbVVe` Ua` _` g` [USf[a` eVf`bdabae[f[a` eed[U]Wf[X]cgVd` _` S` [XVd`
fSf[a` d` aXVd`VW` b`a` [` VS` e` SdJ`T`d[cgV5a` _` g` SgfÁ` DÁ` afa` e`
7j` b`adW` S`LSdVWVVe` S`TadSfa[dVd`Vf`UZVdVZVgd` VVfagfVd`V[eU]b`f` Vd` [` hVd`f`eVS` e`SeAŁgd[fA`
[` Vgefd[W`WVf`VÁhVabbW` hafdVd`VVe`SgžHage` ÁfVd`bSe`d`Á`dW`UÁe`15` Vd`f`fagf`e`_` b`WU`[cgW`
[U`
7` X` f`XS[fVd`Ua` ` SgdWhae[VÁVd`WfdW`VS` e`S`Ua` _` g` SgfÁ`Vf`Ua` _` WfW` VVe`Sd[f[U]Vd` bdbabaŽ`
eW`g` Wf`d[Tg` W`



8a` VSf[a` bagd g` WUj`fgdWWeAŁgd[fA` Vgefd[W`W
8a` VSf[a` VVdVZVdVZVdVba` `gVW gf[fFÁ bgT`cgW
y!f K@ŠŠŠ?wEt tz?, .x@

S`ÁWt` _` [W?` a` ea` 4B
Fag`ageWUWVj`
8dS` UW

FÁ`AbZa` Wt` / fi
Fi` [ffVd` QrWETdZ
5agd[Vd` t, €trt!QyEt tz?, .x

3bdĀe'SLā^MUFa' | >V#5SZ[VdeWWS eĀLgd[fĀ] Vgefd[VWVf Va' f^g' W#atWVf]e
[[f[Sgj V#f WWS'ad[e]d V# dĀeg'fSfe WWS dMZWVdZW'S 8a' VSf[a' S 'Mb'S[e]d
Sg\agdVZg[WWhagebcbaedVd | >V#DWSdVe' žG' W' aghWVVLā^MUFa' ° 'ScgVWV
' agefVā' eVfVbka' ebSof[Lg'ĀdW VVf, [^eSY[f^ VV/baedV' Mba[f WWhgWVg' W
V[e]b[Vēgdg' aTVVf'g' Lā' U#f'g' VcgVf[a' [Āe° 'S eĀLgd[fĀ] Vgefd[VWV'Egd
'M#ēgdV V/bĀ[VWUNbSdVWV b'McgVW[da' fg' ĀLā' a_ [efVg' eaUa'āYgW 1Egd
' [U#f'fgVWVcgVbVVeLā' fg' S' fZcaba'āYgVg' [YĀ [Vgd 1

@afdWha'ā' fĀ ShWU# | DWSdVe' V#f WVLĀVd'g' ba' f WfdVW#V[e]b[V#f W
XShad[e]d' MbSofSYWVg' _ Ā' VāTVVfWdMZWVdLZVShWV#ba[feWWhgWV[XĀdVfe
VfLā' bĀ' WFS[dV#

7' X' f ShWU#DWSdVcgv agehag'ā' eSU#e]T'V#Sgj ` a' ž [fĀd SydĀ' WfĀe
VWV b'V#VWV [e]W e]fgSf[a' f' ageeagZS[fa' e_ V#fV# V[e]baef[a' Vg YdS' V
bgT[VUW#Lā' fVge d[Vf[XcgV# >V#U[fakWeeV#hĀWf Wb'geW b'ge[fĀdV#e
° Lā' bdVWdV#cgVf[a' eVfV#V#j e[Vf[XcgV# ° _ [V#j SbbĀZVWV#V_ a' W
Lā' b'V#WV# e' VcgVf[e'Āhā'gWfz>S 8a' VSf[a' f bSdU#fW aghWVVLā^MUFa' f bcaž
baedW#dMSdVe'egd' afdV_ a' W#XShad[e]V#f dS' e_ [ee'a' WVLā' ` S[ees' U#fV
eagZS[fV#SbbadV#eS bVfV#b[V#bV# ^ĀV[XUWVg' VēaUĀĀ Va' f V#XV_ V#fV#
Za__ V#ea' fW_ VēgdVWbdVWdVW#VĀL[e]a' eĀUS[dV#

Fag'ageW^W Shd[^
9 [V#? afV# 8a' Ue[

F [fdW 3ff[fgVWSUMSg d[ecgW EU[WU#ÄLb` a_ [cgV#
 ? afeZU#Äe d[ecgW[U#f[fgVWSff[fgVWSUMSg d[ecgWShV#e]a` Sg d[ecgWYaÖf Vg d[ecgW
 bd[eVWWWÄU]e]a` †eU[WU#ÄLb` a_ [cgV#La_ badfW_ WfS#V# T[S]ebekLZa`a`y[cgW
 3gfZad >SgdS5a` U` S
 6 SFWWWbgT [USf[a` _ S[
 >WfdShS[`bdÄeWfÄ VS` eUWUaLg_ Wf XS[f bSdf[WVg` bdaV#V#Wd#VZVdLZWegbV#h[eÄ bSd9 [geV#bW3ffS` Se[
 /6 [dV#V#gdVg >STadSfa[dVW#eU[WU#ÄLb` a_ [cgV#V#EfdSeTagdYfV#X` S` UÄbSd`S8a` Ue]z5 Sda`f` W#_ S#Ä
 W SLaadVa` ` Ä`ÄV[f]a` ž7`S[WEW#k S SeegdÄ`Sd#WV#gdW# Yg[e]f[cgVWWS hV#e]a` ad[Y]` SMS` Y`S[eW]cg] S
 ÄfÄ f#Sv]f[VWV X#S` ÄS[e]bSd6[` SZ ? U5 SdfZkz>V#ab[[a` ecg[k ea` fbdÄeWfÄV# W d#V#S` LZV#ea` f U#V#VW
 ^SgfV#gdV#eVg`V#
 5WUaLg_ Wf V#f V[e]ba` [T`WWS` eeS hV#e]a` ad[Y]` SMS` Y`S[eW]egd`W#e]fW# fV#d V#VWS
 8a` Ue]z`

A propos de l'auteure



> gdS5a` U` S SaTfWg g` ValFadSf W eU[WU#ÄLb` a_ [cgV#VW#g` [hV#e]fÄ
 > V#H#W[eW; fS#fWV egd | >WV#V#eZ[b V#`S`LaabÄdSf]a` VS` e V#e`V#j
 Vgf[fÄbgT`cgW žES d#VZVdLZV#S bagdTgf V V]S_ [V#d`^` XgWUW#g` V#V#eZ[b
 ha`a` fS[d#egd`S`LaadV[` Sf]a` V#W#dagbV#BagdÄba` VdW U#V#V#e]a` †W#V#gf[f#eW
 V#e_ ÄfZaV#e`V#L#`V#V#V#Wa` ` ÄV#e]V#bÄd_ WfS#V# , W#e]e]V#e]V#bÄd_ WfS#j
 ea` f bSkÄeV#_ [eW e]fgSf]a` V#L#aadV[` Sf]a` V#W#dagbV#U#U# VS` e V#Tgf V#d#V#ÄV#d
 V#e]a` V[f]a` eVW_ af[hSf]a` dÄV#V#z`

Pour citer ce document

5a` U` S>ž/ f# 3ff[fgVWSUMSg d[ecgW EU[WU#ÄLb` a_ [cgV#e]g_ TV#d ž VWS`La`V#f]a` >V#DWSd#Ä
 8a` VSf]a` bagdg` Wlg`fgdVW#ÄLgd[fÄ[` Vgefd[VWV#fag`ageW#8dS` U#z9 dSfg[fV#_ Wf fÄÄLZSd#V#T`W#egd ,
[@](mailto:y#t#f#K@SS#w#e#t#z#?#.#x#)

Vj/bAd_ WfS^@ageVÄ_a` fdVda` eS[e] Sg fdShVdeVjVW_ b^Vd cgWS dÄS^fÄ` WUaddVda` V bSe
fag`agde^ UMcgW^a` bagddS[f SffWVdMW g` La_ badfV_ Wf dSf[a` ` W^SUA^Sg d[ecgVZG` WfZÄad[W
S^fVd Sf[hW/SbbWÄWfZÄad[VWVebVdVhV/BdabWV F ZVdck W S Y^S[efVf S^ade [fcbVg[fVZ>W
LZSb[fdW bdÄeWfW SgfdVjVW_ b^Vd cg[eWÄ_ SdcgW f VWS ^ffÄdSfgdWÄLa` a_ [cgWWTSeW
ag VVZkbarZÄe dSf[a` ` W^@ageVjS_ [Vda` eVbdVghVW_ b[d[cgVWVj/bAd_ WfS^VW
VÄh[Sf[a` eVg La_ badfV_ WfZ7` bSd[lg^Vd` agehVda` eLa__ Wf ^SbVdVb[f[a` Vg d[ecgW^V
bdaTST[ÄeV^ [Uvd[fVgVWbVghWfS_ WVdUvdS[e[V[h[Vge^ La__ VfdWVbdVjdxSUM^ VV
LZaj d[ecgÄz

; ^Vf US[dcgW afdW[eUgee[a` ` Vef bSeVjZSgef[hV5WUZaj Vef VÄ[TÄÄ USd^WTgf Vef VmbÄeWZ
fVdVWVW[eeÄ_ [VdVWfZÄad[VÄÄLa` a_ [cgVWWTSeWS[e[cgWVbdVghVbekLZa`aY[cgVg
La_ badfV_ WfZg_ S[^SUMSg d[ecgWV^ [Uvd[fVgV

bScS_ ÁrdVéVIT[S]ecg[bVghWf [fVÁdVd fVécgVWvébdÁdWUvéVéSgfdVé` SdSf[a` S{fÁ` 1_ [fÁW
VvéLá_ bÁrWUvé` 1_ [fÁVé W USUg` S V[X]Ug` fÁ` 1_ bdÁV[dWVvéÁhÁ` W_ W feXgfdel VvéUSbSu[fÁe
eSf[ef[cgVé` SVÁcgSfVéag` 1_ USbSu[fÁV` g` S'WVf` 1_ Ua_ bdWVdWVvébdáT` Á_ VvéLá_ b'VjVé
>VéÁLá` a_ [eVéU'See[cgVéVé` ÁaZU'See[cgVé` a` fTSeÁ` Vjgd fDShS[^egd VvébdVghVé` W_ b[d[cgVé
;`ea` fVéÁ` Vjgd eÁeg` fSfe fZÁad[cgVéShVUvéVéagf[` eÁLá` a_ Árd[cgVéVé` ádcgVWvé` eÁeg` fSfe` W
LaddaTadS[Wf bSe` S fZÁad[W[` e_ aV[X]S[Wf Vjgd e fZÁad[VéW` Xa` Uf[a` VVjgdS` S'keVWvéVa` ` ÁVé
____ >ÁLá` a_ Árd[W_

8Á b]h]cb

>ÁLá` a_ Árd[WVé` ÁrgVWVW` Sbb` 1USf[a` Vvé` ÁfZaVvé` eSf[ef[cgVéSg] Va` ` ÁVéÁLá` a_ [cgVé7` WUa_ Z
bdWV` fagfVé` VéVéVé` [cgVé` eSf[ef[cgVéVé` SFZÁ` Sf[cgVé` cg[ea` fVÁhVébbÁVé` bagd` Ába` VdVéSg] bdaZ
T` Á_ VvéÁLá` a_ [cgVé` S` S'keVdVéVa` ` ÁVé` fVéVdVé` fZÁad[VéVéVé` aVÁVé`

BWVS` f` á` YfW` bel` [^ÁRS[f` SdW` Wf dVá` ` g` cgVWvé` eU[WUvé` ÁLá` a_ [cgVé` WbaghS[Wf ÁrdW
g` W[eU]b[f` Wj/bÁd` WfS` VVéBWVS` fVéVÁUW` [Vé` S_` S` [ÁdVbd` U]bS` WVWVéVéVé` Wbagha[d
Vvé` fZÁad[Vé` ÁRS[f` V` ÁrgV[VdWV` S` [ÁdWV` b[d[cgVWvéVa` ` ÁVé` aTeVdVhST` Vd` VÁd[VÁVé` WVW[h]d` a` Z
` W` Wf` SfgdVé` >W[h]d` ` W` Wf` SfgdVé` V` M` Áeg` fSf` VbdaUvé` ege` a` ZLá` fD` ÁeVéLá` f[WfVW
` a_ TdVj` XSURVjgd` cg[bVghWf` WbSe` ÁrdVáTeVdVhÁeVé` bagdS[Wf XggeeVd` S` S'keVéSf[ef[cgVé` >Vé
Va` ` ÁVéÁLá` a_ [cgVé` ea` f` XgWUÁVé` bSdg` W_ g` ffgVWVW` hSc[S` Vé` VVé` [fVdSf[a` eWfdWVWVé`
bSdLá` eÁcgWfT[W` cgVWvé` fVUZ` [cgVé` ÁLá` a_ Árd[cgVé` bVd` VVéS[WfVW` S` [bg` VdVéVa` ` ÁVé
UWVéS[` Vé` cgVé` f[a` e` WbaghS[Wf fcbaghVdVdVába` eVé` >[VÁVdSV[f[a` ` W` VcgVW` L` badS` feXURVjgd
ÁLá` a_ [cgVé` WbVghWf` ÁrdVá` fD` Áe` b` [cgSf` cgVWS` L` a` VVéVWVá` ` ÁVé` ÁRS[f` VéVé` ^` akW
` SdW` Wf dVá` ` g` VVhÁd[XVd` S fZÁad[VÁLá` a_ [cgVé`

<b`b` S
<b` ebqC` C`z` YC

B`gedÁUW` _` Wf` a_ TdWVUvé` bSf[cgVé` a` fUZS` YÁVéVW` aghVWé` SbbdaLZVé` a` fÁfÁ` VÁhVébbÁVé`
6` g` U` fÁ` ^SbbdaLZVéLá_` badfW` WfS` VdSdV` [eW` cgVé` f[a` ` Mbaefg` S'fVW` Za_` a` Vá` a_ [U]gebagd
XShad[eVdWé` aVÁVé` VVWá` ` ÁVé` b` geagb` VéVé` b` ge_` S` ÁST` Vé`

>Vé` aVÁVé` L` a_ badfW` WfSg] ea` fUSbST` VéV` [` U`gdW[hVé` T[S]ecg[` WbVghWf bSe` ÁrdVbd[eW
Lá_ bVWS` e` S fZÁad[VU` See[cgVé` bSdVjW` b` W,

>Vé` 1_ [fVéVWS` L` a` [f[a` ` Zg_` S[` Wz` >adeVg` bdaUvé` egeVWS` b[eWVWVÁU[e]a` t` Vé` Zg_` S[` e
` WéVéS[Wf bVjgfZÁrdVbSe` W_` VégdW` See[` Vd` fagfW[` Xad_` Sf[a` ` ÁUvé` S[dV` bagd` bdW` VdVéS
|` Ta` ` W` VÁU[e]a` ` ÁVé` Z` ZV[dVUWVé` cg[Va` ` WVW` Vj` Vjgd eÁeg` fSf` bagd` ^` V[h]Vgfi6` Wb` ged
VS` eW` a_ TdVj` L` a_ fVjVé` [^eVéSf[` Vj` SURVé` gbbadVd` cgVWvé` S'Wf` eÁLá` a_ [cgVé` ea[Wf
Wf[ÁdW` Wf dSf[a` ` Vé`

>Vé` T[S]eLá_` badfW` WfSg]` dÁUgde[Xé` >Vé` [V[h]VgeVghWf eVfda_` bVdVéS` eUWVéS[` Vé` efgSZ
f[a` eW` WbSe` ÁrdWV` _` VégdWVW` aV[X]Vd` VjgdLá_` badfW` Wf?` Á_` WVW` VjgdWéVj` S` fag` W
VjgdVj` b` [cgS` fVé` efgSf[a` eLá_` b` VjVé` [e` WbSch[W` Wf bSe` 1_` S_` Á` adVd` VjgdS[ea` ` W` Wf
VéUWVéS[` e_` aVÁVé` f[W` Wf L` a_ bVWVUvé` L` a_ badfW` Wf eVdca` Áé`

____ DSf[a` S{fÁ` 1_ [fÁW_

8Á b]h]cb

>[VÁWVdSf[a` S{fÁ` 1_ [fÁVé` ÁfÁ` bÁeVfÁW` bagd` XáUS` f[eVd` S'fVf[a` egd` ^ÁUSd` WfdVéS` dSf[a` S{fÁ` Zg_` S[` W
bSdS[fVé` g] eageZ` VVW` S` fZÁad[VÁLá` a_ [cgVé` USee[cgVéVé` ÁaZU'See[cgVéVé` S` dS` fFÁ` Vg` L` a_ badfW` Wf` Zg_` S[` fV
cg[` V` bae` f` VVWVáTeVdVhVéVé` e` S` h[VÁLá` a_ [cgVé` >[VÁW` V` bSecgVWVé` YVé` ea[Wf` eUW` _` Wf` VVÁ` [TÁ` Wf
[dSf[a` ` Vé` cga[cg[` e` V` ea[Wf` bSdVá[e] ` S]e` cgW` [` Vjgd` eShá[d` ` [` Vjgd` bagha[d` WU` S` Uj` ^` WVjgd` bVd` VVéVé
V` S'fVj` VdVéVéSg` [hVé` Sg` V` S'VbSf[a` ` abf` _` S` VVé` _` akW` e` bSd` dSbbad` Sg]` X` d` LZ` adVdVé` g[eVWV` ÁLá` a_ [W
Vé` L` a_ VVé` Z` @

BSDS[` Vjgd` g` V` SgfdVé` Áha` g[f[a` ` SbbSdÖf` ShVU` S` L` a` VVéVWVWVá` ` ÁVé` Vj` bÁd` _` WfS` Vé` 1_ ÁVé` Sg]
bZÁ` a_ Á` Vé` ÁLá` a_ [cgVé` >Vé` Va` ` ÁVé` Vj` bÁd` _` WfS` Vé` ea` fVé` Va` ` ÁVé`

cg[ea` fVÁVé` eUW` _` WfVéS` eg` Tgf` d[Wf[X]cgVé` gSgfdVéVéS` eVé` L` a` Vj` f[a` eLá` fD` ÁVé` Vd[W` S` W
Eg` Wd` 1` bZ` @

>VéVé` Wj` dSf[a` S{fÁ` 1_ [fÁW` L` a` ` g` Sgee` eage` W` a_` WV` dSf[a` S{fÁ` 1_ ÁW` /Tag` WV` dSf[a` S{fÁ` W` S` Y` S'fVé` Vé` VÁX` [` UZ` Vé` eageZ`
G` bdW` [VdVé` bSeVS` eUWéVéS` ÁfÁ` X[Sf` bSd` VdVéVéZ` 3Z` E` L` a_` VS` e` Vé` S` ` ÁVé` U` cgS` fVé`





5h]h XY fUh]cbbY`Y ZUW U f]gei Y

5 WUZSb[fdWfS[fWVWVbd[U]bS[VVAVcgW ageSbbadfWVW_ aVAVWUa` a_ [cgWUSee[cgWV gf[fFV
VbAdAVegd`Sff[fgWVWV[V[h[VgeXSUWSg d[ecgV@ageegbaea` ecgWVWVAVU[VVgde/[V[h[Vgecg[
Va[hWfXS[dWg` LZa] ALa` a_ [cgVfVea` f dSf[a` ` WVeSg eW eaO[`eLZa[e]eeWf fag`agdeWV_ S` [AdW
bSdS[fWUWcg[eVfSg_ [V]j` V]gde[fAdVfz@ageLa` _ WAA` ebSd`SVAX` [f]a` Vg d[ecgWVW eU[WUW
ALa` a_ [cgVb bg[e` ageV[e]bfa` eWVZkbarZAVVfVWVfZAd[Vz

ž @f]gei Y Yh`rYgdAfUbW a Uh.Aa Uhjei Y

6 V]j VAX` [f]a` efA_a[Y WfWVWSXaA` Va` f`Wd[ecgWVWf YA` AdS_W Wf bVdAg ,

Risque` a_ Lh`_g`

ž >Sbaee[T[fFVWVWVdVWVWVbVdVfVag WV_ SZV]gdež

ž 6 S` YWVSeegdS` UVf, Szd[ecgWVWbVdVfVag SgfdVhA` V_ Wf bagd`VdVgVg` WdVUS_ Sff[a` bV]f fAdV
XS[fW Tz`Wk bVWg` fVhA` V_ Wf fVcgWV[UVWVag` Vha` Lz`W_ a` fS` fWVS dVUS_ Sff[a`
VS` e` MUSE aO`g` fVhA` V_ Wf eVbcbVg[f- Vz bVdA` ` Vag aTVf`hS`gA` bSd dSbbad` eV
LbSdVAd[ef[cgVcg[d[ecgVbS[WfVWVWVdVdVg` [U]WVf SeegdA`ž

Risque

| >Wd[ecgWUWVf` MbaWfVfVcg` g` VSLU[a` ag` g` VSLU[h]fFV LZa[e]VWk La` bde`MUZa] WV[SUFFa` fi
S_ A` W`g` VbVdVWg` d[eg`fSf[VAE]dST`Mz`>S` af]a` [b[cgWVW]eWUWVg` LZa] cg[[XgVdSf
/ag S [XgVfiegd` MAdeg`fSfz6 VebVdVfVbafWf[VVWVbV]hWf WVWz` A` VAdVdSbbVAVe` d[ecgVzBdVcgW
fagfVSLU[h]fFVZg_ S[V]h_ badV]g` d[ecgW_ S[eUdVfS[V]ea` fTVSgVbgb`b`ge d[ecgVdVcgWV SgfdVz

>S VAX` [f]a` Vg d[ecgWVW eU[WUWV ALa` a_ [cgVd Vef SgfdVcgWUWVVe U[fAVe U]ZV]gež7` dAY`W
YA` AdS`W Wd[ecgWVWf bVdAg La` _ W AYsf[ž5VdVVS fi W eU[WUWV ALa` a_ [cgVd [^bV]f fAdV
SeeaU]A` WVeVWVVe` AYsf[Xe]La` _ WVVeSUU[VWf bafWf[VefVfV` VVeT`A` AX[UWVfVWcgWV[` ahSf[a`
[eegWVWVS dVUZVdVzVz6g ba[fVW]gWVVe eU[WUWV ALa` a_ [cgVd` Wd[ecgWVWf VShS` fSYWSeeaU]A`
^ [UVd[fgVWcg` WVeVWVVe` AYsf[Xež

BagdU`Sd[XVd`S fVd [a`aY[W` agegf[fVdVd` e`S` af]a` Wd[ecgWVWV` a_ [cgWVfVAX` [da` e`Vd
fVd` Vd`VbAdS` UV_ SfZ`A` Sf[cgW` afAVW]H bagd [7j bVdVW HS`gW W S` Y`S[e]f]hA` V_ W fVf
dAeg`fSfz

_____ 7ebAdS` UV_ SfZ`A` Sf[cgW_____

8A` b]h]cb

>VbAdS` UV_ SfZ`A` Sf[cgW`g` VhSd[ST`MS`ASfa[dWVf`S` akW` Vba` VAdAVWVfagfVd` Vd`hS`V]gdebaee[T`Vd`
cgWSHsd[ST`MbV]f bVdVdVz

Egbbaea` ecg`g` WfdVdVWV]dVATgVgV` VSLU[h]fFV Va` f[^aTf[Wf]g` T`A` AX[UWS` `gVz@AS` _ a[e
`W_ a` fS` fVg T`A` AX[UWVf [UVdVfS[/ T`A` AX[UW Vef`g` VhSd[ST`Vf,

`adeVd`Ta` ` Vd`S` `AVe [^Vef` A`VhA`/ fShW]g` VbcaTST[fFV/bf]

`adeVd`_ SghS[eVd`S` `AVe [^Vef` TSe`KfShW]g` VbcaTST[fFV La` _ b`A`_ WfS[dWVW` Zb]z



5VeaUjgdWUveSbbWVfWVvAhA` W_ WfeWV`VvTAA` AXUvSeaaUjAeWv dAeg`fSfez> WfdVbdVWgd`
`Wesf bSe` ^ShS` Uvef` ^S` `AVvWvStA` `Wag`_ SghS[eWVfLa` bfvWgd`Vv bcdTST[ffrAeb W` Zb bagd
bdAha[dVvTAA` AXUv; ^Vv`^1` afVdcgW age` VbdWv` eW` La` bfvWcgWVvj baeefT[ffrAe, g` WvTa` `W
ag`g` W_ SghS[eWV` `AVv; ^Vv` US[dcgWVS` e` SdAS` ffrA` [^Vv/[efWTVSgUagb WvVfgSf[a` ebaeeT` Vv
W` ShSdST` W` TAA` AXUW` bagdSf bcdVvdWTVSgUagb VvWvS` VgdV[XAdWVv@AS` _ a[`d` age` W
fSf[VvA` ebSe` Vv hSdST` Vv` La` f[`gVv` UvCg[[` b[cgVvCgW age` Sgda` ebSe` XS[dW` ZkbfAZAeVv
Sg eg` Vv WVS V[ef d[Tgf[a` Vv` TAA` AXUv` / afS` _ Wf e[`SV[ef d[Tgf[a` Vv bcdTST[ffrA` Vv` g[`Xad` W
` ad` S` Wv ag` e[Wv Wv Wv Af` g` Vv SgfdVv ad` Vv

BagdAhS`gVvVea` SUR[hfrA` ^WfdVbdVWgdVa[fUS` Vv` Vv` YS[` eXgfgd` bSdf[dVWS` bcdTST[ffrA` cgW
Vv` YS[` ebaeeT` Vv` Vv/[efWfz7` fVv` Vv` Ala` a` [cgVv` Uv[eSbbWVv` Vv` bAdS` Uv` SFZA` Sf[cgW` afAW
7H bagd[7j bWVW` HS`gW` W` S` Y` S[efVv` SUR[hfrA` Vv` Wv` Vv` US` Vv` Vv` Ala` _` Wv g[f` ,

$$EV = pX + (1 - p)Y$$

4A` AX[UWv` bAdAV`g` vSUR[hfrA`

9 Ya d'Y

E[bSdVWV` b` W` WvTAA` AXUv` A` AhW` `adeVg` WvTa` `WS` `AVWV`^1` `adeVg` W_ SghS[eW
S` `AVWV` cgWVS` bcdTST[ffrA` cgWUv` Vv` Vv` AhA` W_ Wfe` eVdAS` [eWf` Vv` S` _` A` WUv` Vv` ZV[dNb/` . ffr` W
TAA` AX[UWv` bAdAV` Vv` z

> Vv` bAdS` Uv` SFZA` Sf[cgW` 7HfVv` f` W_ Vv` g dVZ` kbfAZA` f[cgWVWVS` hS` Vv` dXgfgd` WVW` SUR[hfrA` z7` ^W
` Vv` Wv` Vv` Vv` bSe` S` dAS` ffrA` , Wv` Wv` S` _` akW` `Vba` `VAd` Wv` Wv` fag` Vv` Vv` e[fgsf[a` e` dAVWv` baeefT` Vv; ^
eV` bagdSf[cgW` SUR[hfrA` `Wv` bcdVg[eWS` S[eg` TAA` AXUW` gfgd` Wv` -UVv` fag` e[` b` Wv` Wf
UvCgW` age` bagha` e` Vv` bAdVv` ^[` eS` f` bAdAVv` z

; ^Sd[h` Wv` eagh` Wf` cgW` ad` cgW` age` Sha` e` g` LZa[j` ^1` XS[dW` age` age` XaUS` [ea` e` egd` ^ShW` [dW
Lza[e[ees` f` Wv` abf[a` e` cg[Sgda` f` g` [` bSuf` egd` Uv` Vv` [ZU` zBS` deagU[Wv` Wv` SdfrA` `ageS` ^a` e` S[` fWS` f
VAX[` [dUvCgW` age` Wf` Wv` Va` ebSd` AhA` W_ Wf` Vv` dAeg` fSfz

chA` W_ Wf` Vv` dAeg` fSf`

8A` b[h]cb

G` AhA` W_ Wf` Vv` g` WU[dA` eS` UvCg[bVv` f` eV` bcdVg[dW[` VAbWVS` _` Wf` Wv` ea` [` badS` Uv` 6S` e
` afdWVWV` b` Wv` g` W` Ta` `WS` `AV` Vv` g` AhA` W_ Wf` -g` W` _` SghS[eWV` `AV` Vv` g` SgfdWAhA` W_ Wfz
4[W` cgWVS` e` SdAS` ffrA` Vv` AhA` W_ Wf` eV` Vv` hWf` Sha[dVv` La` e` AcgWUv` [` badS` fVv` bSdVWV` b` Wv` g` W
` S[ees` Uv` g` SUU` Vv` f` gU` AS` dW` g` ea` _` Vv` Vg` 9` ffr` ^ade` WVS` V[eU` g[e[a` `cg[hS` eg[h dW` Vv` AhA` W_ Wf` e
eVv` f` AhS` g` Ae[` VAbWVS` _` Wf` Wv` Vv` g[` XgW` Uv` Wv` g` Wv` Vv` g[` badS` Uv`

> Wv` dAeg` fSf` V` g` AhA` W_ Wf` Vv` eS` dAS` [eSf[a` / bSdVWV` b` W` S` Ta` `Wag` ^S` _` SghS[eWV` `AVv` 5Z` ScgW
AhA` W_ Wf` SbbadVWv` La` e` AcgWUv` e[cg[bVv` hWf` fag` LZVv` `Wv` Wv` g[bSdVWV` b` W` ^ade` V` g` WvTa` `W
S` `AV` Vv` hW` fVv` ea` f` A` Vv` AVv` Vv` [` b[fe` ea` f` TSd` ^S` bcdVgU[hfrA` Vv` eSf` Wv` Vv` ZA` ` egbaeV` cgWUv`
US` Suf` Ad[e[f[cgVv` ea` f` [` b[fVv` Vv` VS` e` Vv` dAeg` fSf` Wv` AhA` W_ Wf` Vv` bVv` hWf` ffr` dWVv` b[` AVv` W` Vv` Vv`
_` a` fRS` dVv` bSdVWV` b` W` WvTAA` AXUW` Vv` z

BagdW` dWV` [d` ^Vv` Wv` b` Wv` age` bagha` e` Vv` U[dW` SUR[hfrA` U` zWv` ege` La` _` Wv` [e` cg` AV` US` dWVv` W_ z
b[cgWVv` AhA` W_ Wf` eV` Vv` dAeg` fSf` e` cg[ea` f` [` Uv` dfrS[` ez7` ` V` SgfdVv` fVv` Vv` Vv` dAeg` fSf` dAVv`
bagdSf[ffr` dW` Mb` ge` A` Vv` A` ag` b` ge` T` SecgW` Vv` bAdS` Uv` SFZA` Sf[cgW` Vv` bSdS[` Vv` g[d` g` SUR[hfrA` cg[YAZ
` AdW` Wv` XS` Aa` dAY` g[AdW` Vv` ScgVS` `AVv` Vv` eOdW` z5` Vv` Vv` SUR[hfrA` `Wv` La` _` badVv` bSe` Wv` d[e` cgW
AVv` f[fgVv` hVv` ege[` Uv` d[fgVv` Vv` US` d[ea` ` dAeg` fSf` Vv` fag` age` W_ A` WUv` Vv` ZV[dVv` CgWVS` bcdTST[ffrA
cgW` Wv` Wv` Vv` Vv` VdVv` TAA` AXUv` eOdW` Vv` Vv` AY` S` W` z

; ^Vv` US[dcgWVS` e` Wv` a` S[` Wv` Vv` eU[WUv` Vv` Ala` a` [cgVv` S` VAX[` [frA` ` V` g` vSUR[hfrA` d[e` cgAVv` Vv`
T[W` b` ge` SdVv` CgWUv` Vv` Vv` g[ffr` AW` ad` S` Wv` Wfz6S` e` Vv` Wv` eYAA` AdS` ^W_ af` d[e` cgWv` Vv` SeaaUjA` ^1` S
bVv` Wv` Sg[Va` _` S` Vv` ^1` g` Vv` bbadf` g[ffrA` S` cgAVv` ag` ^1` g` Wv` bVv` Wv` Wv` S[` ez> SV[XAdW` Uv` bcd[` U[bS` W
WfdVv` S` VAX[` [frA` ` Ala` a` [cgWv` g` d[e` cgWv` eS` VAX[` [frA` ` b` ge` YAA` AdS` Wv` Vv` fcdagh` WVS` e` S` La` ` afSf[a`
` AY` Sf[hW` cgW` badVv` Wv` Vv` Wv` d[AdVv` 7` Ala` a` [W` S` af[a` ` Wv` d[e` cgWv` La` ` Uv` Vv` Vv` AhA` W_ Wf` cg[eW
bcdVg[ffr` ShW` g` Wv` bcdTST[ffrA` La` ` g` Wv` ag` cg[^Vv` baeefT` Wv` Vv` [` Vv` S` ad` e` cg` g` AhA` W_ Wf` cg[eW
bcdVg[ffr` ShW` g` Wv` bcdTST[ffrA` Vv` g` ag` Wv` AdA` Vv` Vv` f[eOd/` ag` Uv` dfrS[` fr

> Vv` bAdS` Uv` SFZA` Sf[cgW` 7H` Vv` bSe` g` Vv` hS` Vv` dAVv` Wv` S[e` S` _` akW` `Vba` `VAd` Wv` Wv` fag` dAVv` Vv` S[e[` W` a` TdW
_` akW` Wv` WS` fe` bSdVWV` Wv` bSdVWV` b` Wv` z` WS` ffr` Wv` Uv` dVv` bAdA` Vv` bSe` ^1` g` ` a` TdW` dAVv` Wv` WS` fe` bSdVWV` Vv`
; ^Vv` [` badS` f` Wv` SdVv` dWVv` Wv` Wv` AX[` [frA` ^1` ^Vv` b[f` VS` e` Vv` V[eU` g[e[a` e` ^1` hW` [dUSd[` k` S` Vv` eS` bWv` e` bkeLza` a` y[cgVv` e[cg[
V[ef]` YgWf` Vv` d[e` cgWVS` e` Wv` a` S[` Wv` Vv` bVv` Vv` Vv` d[e` cgWVS` e` Wv` a` S[` Wv` Vv` YS[` ez

Dc]bhwA

_____ >Wd[ecgWVW eU[VWUWÄUa` a_ [cgVÄ _____

7` dÄeg_ Äi g` WSUR[h]fÄ d[ecgÄW_ b`[cgWcgWVÄÄhÄ` W_ WfeVW` VgdeUa` eÄcgWUWÄea` f` [UvÄrS] e, Vgd dÄS[teS]fa` VÄf b`geag_ a` [ebdÄTST`VÄ` hVÄW` Wfi g` WSUR[h]fÄ eÖdW_ b`[cgWcgWVÄÄeg`fSf VÄf UvÄrS] ž 7` eU[VWUWÄUa` a_ [cgVÄ` Vd[ecgWVÄf SeaaUÄ` 1` ^` UvÄr[fgVWcgWVÄ`VÄVÄeaa[WfTÄ` ÄX]cgVÄag` ÄXSeVÄZ

6WS_ Ä_ W_ S [ÄdV`SVÄX] [f]a` Vg d[ecgWVa` `ÄVbSd`^EA [fÄYdWSh[e]a` ÄUa` a_ [cgW VÄfVÄ` ÄS VÄfVÄ ad` VWÄX] [f` Vd[ecgWUa` _ W_ ^VÄVÄVÄVÄ] UvÄr[fgVWÄgd`SfVÄf` fVWVÄaTVÄVÄ]X` ž Fcb[e` af[a` e` badfS` fVÄeaa` fUa` fWgVÄVS` eUvÄfVÄVÄX] [f]a` ,

>Wd[ecgWVÄbVWVWVÄ` VÄfVÄ` [S]fa` ag VVÄ` UvÄr[fgVWVÄÄhÄ` W_ Wfel Sg eWÄeÄ` ^bagddS]f eVÄÄS[eVÄÄag` VbSe eVÄÄS[eVÄÄZ

>Wd[ecgWVÄfÄfÄdVÄÄÄÄUd`^Sg` [bSUF`egd`^ShW[d`VÄÄ` aV[X]Uf]fa` ebSdÄSbäd` Sg efSfgf [[f]S]fcg[fagLZVWÄVÄU[V]Vgdž

>Wd[ecgWVÄf bVÄf] Wf eVg`W_ Wf` adecg [^VÄf Ua` bSÄ`Sgj` aTVÄVÄ]X`eÄVÄVg VÄU[V]VgdVS` e`W Ua` fV/fWVÄVÄU[e]a` ecg[Sgd` f g` VÄVÄ`egd`^ShW[dž

>ScgVÄf]a` cg[eWÄg]f VÄf` SfgdVÄVÄ Wf ,

5a_ Wf VÄWÄedÄSY[aeVÄZ]e° VÄÄhÄ` W_ Wfe[UvÄrS] ebSdÄSbäd`° V SgfdVÄeS` ed[ecgW

ž @U]h]i XY ZW U f]gei Y

Bagd Ua` f` gVd ShWV` ^VWV` b`WbdÄUÄWVfi [_ SY[W cgVhage eakW` bcbäd[ÄRS]dWV` g` WSUR[h]fÄ d[ecgÄWd cg[YÄ` ÄdWg` dÄVWV` ga[f VV` ShWUg` WbdÄTST[fÄÄ VV` f` ea[f VV` ShWU` S_ Ä_ WbdÄTST[fÄÄ VV` f` ž6 S` eUÄUdÄ` ^VÄÄÄS` U_ SFZÄ` Sf[cgW7HfVÄVÄ VÄf 7HdVfVÄVÄf ÄYS`W` /7HdVf` fž? S] fWS` fi` egbbäa` eg` VSUR[h]fÄ eÖdWÄeI cg[YÄ` ÄdW` ShWUg` W` bcbÄTST[fÄÄ VV` /7HÄfV` fž4[W cgVWÄVÄVÄg] SUR[h]fÄeS]Wf` S_ Ä_ WbdÄÄS` U_ SFZÄ` Sf[cgW /7Hfif eVg`WSeVÄ` VÄVÄf eÖdWUÄVÄZ` ŽV[dÄcg VÄVÄgä` [f g` dÄVW`g eÖdÄE[WÄVÄVÄS]Wf UZa[e]d bSd_ [UÄVÄVÄg] SUR[h]fÄÄ UvÄrS] VÄbVÄeaa` ` VÄeVÄS]Wf [V[X]ÄdV`fVÄ` V SgfdVÄ`bdÄÄÄÄS]Wf` ^SUR[h]fÄ d[ecgÄWd - V SgfdVÄ`W UadÄUÄZa[e]dS]Wf` ^SUR[h]fÄ eÖdWÄZ`7` V SgfdVÄ`fVÄ` VÄ UvÄrS] e [V]h[Vge S]_ Wf` Vd[ecgWVÄ UZa[e]eWf` Di UvÄrS] e bÄÄÄdVÄf` VÄVÄ Wf` VÄ UZa[e] eÖdÄVÄeaa` f Sff[dÄe bSd ÄI VÄV SgfdVÄeaa` f [V[X]ÄdV`fe Sg XS]f cgW`SUR[h]fÄ eaa[f eÖdÄg d[ecgÄW]fS` f cgVWÄ VÄÄÄÄS` UÄÄ` _ SFZÄ` Sf[cgVÄ/7Hfäa` f ÄYS`VÄZ`>S` af[a` V Sff[fgVWÄS]UÄSg d[ecgWVÄ` S]fVgd` ShVÄÄWVÄ` VgfdVÄ Ua` _ W UÄVÄ` e]` Ä_ VÄVÄZ

? S] fWS` fi` ageS`a` edVÄSdVÄVÄVÄb`gebdÄe`^SUR[h]fÄ d[ecgÄWd VÄUSeÄÄ VÄ` V]h[VgeW` Xä` U]fa` Vg bÄ] SgcgWÄ[e S]UÄÄÄÄÄS]Wf` VÄS` hVÄVÄVÄVÄ g]f]eS` f 7H Ua` _ W] UgdÄVgd` ž>VÄbVÄeaa` ` VÄe a` f fVÄVÄg fVÄVÄÄÄÄW UÄÄÄÄÄSg d[ecgWVÄ` U` VgdÄe bÄÄÄÄW UÄÄÄÄ` f ZÄfÄÄÄÄÄ VÄZ`5a` e[VÄÄ` e` ^SUR[h]fÄ d[ecgÄWdZÄ`[a` VÄ` S` VÄ` g` YdÄgVÄVÄ` V]h[Vge,

Egbbäa` ecgWVÄVÄSUR[h]fÄ hage`SbbSd]W` WUa` T]W WÄ` S` WÄ[VÄZ`hage° cgVÄeg` bagd`S`YÄÄÄÄÄVÄS` f` g` S` 1

>Sb`gbSd]f VÄe`WÄeVÄ` S` VÄf g` _ a` fS` f [XÄ]Vgd` ž

_____ 3` ` W>gUÄVÄ@W` _____

g]Ya d`Y

Egbbäa` ecg 3` ` WWW` S` WÄ` bagd`hW`VdW`SUR[h]fÄZÄ` WÄVÄS`YdÄVÄf] WÄVÄbagddS]f W` aTVÄ[d g` YS]` XS]T`VÄ` fiag` g` YS]` ÄVÄÄ/` fi`bSd`Ua`` fdVÄ[e] WÄVÄWVÄ` ^SUR[h]fÄ WÄVÄVÄf` SeÄgdÄWVÄ YSÄ` VÄ` ž5 VÄVÄfÄdS` eSUR]fa` eÄVÄf bVÄÄgVÄbSdTVÄSg]Ug]Ug] Ua` _ Vg]` VÄ`a` ` VÄSXS]dÄ` Ä` VÄ[e]` VÄbd] WÄVÄWÄVÄVÄf` XÄ]Vgd` ^VÄÄÄS` U_ SFZÄ` Sf[cgW7HfÄZ`5 VÄbVÄfÄfÄÄVÄUg] Ua` _ WÄbd]` 1` bSkVÄ`bagd` Äh]fVÄ` Vd[ecgWVÄ WÄSY` VÄcgW` ž4[W cg [^VÄ]e]fVÄVÄ a_ TÄVÄg] XÄVÄVÄe cg[VÄfVÄ` [Wf` VÄ dÄSUR]fa` eZg_ S]` VÄ`S]UÄSg] SUR[h]fÄe d[ecgÄVÄ`bekUÄ`a`Y[cgVÄ bVÄeaa` ` VÄ VÄÄÄÄ WÄ` VÄÄÄÄ` a_ [cgVÄ g` [V]h[Vg bVÄfÄfÄÄÄÄÄÄÄ Ua` _ VÄShVÄÄÄSg d[ecgW]` V[X]ÄdV`f Sg d[ecgW` VgfdVÄg S_ S]fVgdVÄd[ecgW [VÄbVÄS` _ Wf`VÄUÄcg[UÄgeVÄeaa` Sff[fgVÄVÄS]UÄ VÄg]Z]ž6 S` eUÄVÄVÄ` b`VÄ3` ` VÄVÄS]f`USeÄÄÄÄ` W` ShVÄÄÄSg d[ecgWÄd` VÄf` g` _ a` fS` f [XÄ]Vgd` ^VÄÄÄS` U_ SFZÄ` Sf[cgW7HfÄVÄVÄ`SUR[h]fÄZ` Egbbäa` e` _ S]` fWS` f cgW>gUÄVÄ@W` WÄ` S` VÄf` dÄÄÄÄÄÄÄ WÄ` WÄ` ž>gUÄVÄ` g` S_ S]fVgdVÄd[ecgWÄd` ^VÄ` S` VÄb`gecgW`VÄÄÄÄS` U_ SFZÄ` Sf[cgW7HfÄ`@WÄ` g]f] VÄf [V[X]ÄdV`f Sg d[ecgWÄd` WÄ` a` fS` f cg [^VÄ` S` WÄVÄ` WÄ` Ä` WÄgW`VÄÄÄÄS` U_ SFZÄ` Sf[cgW7HfÄ



UWVWa` `AWs e^VjWj bWbAdUAWVf/dWVWj WfVLa_bfAVW agVW ShWU
`S_Ä_WbcaTST[frÄ, WbAdS UW_SfZÄ_Sf[cgWÄYSW fî
ag`g` WSgfdMSUR[hfrÄcg] bVgfdSbbadVdeaf ea[fr ShWU`S_Ä_WbcaTST[frÄ
WbAdS UW_SfZÄ_Sf[cgWÄYSW fSgeel fî

4[W cgWVWVWj SUR[hfrÄeS]Wf`S_Ä_WbAdS UW_SfZÄ_Sf[cgWÄH/ fî`ShSd[S UWVf`b`ge
ÄVWVWbagd`SbdV [ÄdV -ÄUSdzrkBW, † fîcgWbagd`SeVla` VVhSd[S UW, -ÄUSdzrkBW,
† fî

_____ >ShSd[S UW

8Ä bjhc

>ShSd[S UW_VgdWSV[ebVde]a` WvhsVgdeTeVhAVz>ShSd[S UWVf`S_akW` WWWÄUSd[Sg USdÄ VW
hS`VgdebSdSbbadf` `S_akW` Vî

CgS` V`WbAdS UW_SfZÄ_Sf[cgWÄVf`S_Ä_Wjg` [V[h]Vg ShVdeVSG d[ecgWbAdVAdVfag`agde`g` W
SUR[hfrÄb`geeÖdM`g` VSUR[hfrÄd[ecgAVUWVWShVUg` VhSd[ST[frÄ`_ [frÄVî>S_SfVgdVWd[ecgWVsg
Ua` fcd[MbAdVAdVfag`agde`SUR[hfrÄd[ecgAVUWVWShVUg` VhSd[ST[frÄ`ÄVhAVz7` X` †g` [V[h]Vg
[V[XAdVf Sg d[ecgW` SbSeVWbAdVAdVUW VVW, [^La` e[VAdVcgWVdeVWj ea` f`Äcg[hS`WfVdeVWVf
[V[XAdVfz5a`_` W3` `WVf ShVdeVSG d[ecgWVWbAdVAdVf`S`eVla` VMSUR[hfrÄ/ShWU_a[eVW
hSd[ST[frÄf`@W`ÄfS` f [V[XAdVf Sg d[ecgWÄVdSf` VgfdV`W`>gU`^S_SfVgdVWd[ecgWbAdVAdVf`S
bdV [ÄdV SUR[hfrÄ/ShWU`b`geVhSd[ST[frÄfz

@agebagha` d bSdUa` eÄcgWfî` agebaeVd`ScgWf[ä` Wvsha[dLa`_` Wf`Vde` V[h]VgeXa` f`Vgd
UZa]j` XSUM` ^ [Uvdf[fgVWVW` W bSd[Ug[Vd`eVla` `VgdSff[fgVWbVde` `WWWVUWVsg d[ecgWV6S` e
`S bSd[Veg[hS` fW` ageVÄUd[ha` eTd[ÄhV` Wf`Vde`SbbcaUZVde`Vde`b`geUagds` fVde`gf[frÄVde`bSd`Vde`
ÄLa` a` [efVde`Vgds` fUde`ea]j` S` fWVd [ÄdV`S` `ÄVde`bagdÄrgV[Vd`S`bd[eVWVWÄU]e]a` W`bdÄeW UW
VWd[ecgWV` afS`_` Wf`SfZÄad[VWV`gf[frÄ`WbAdÄW` afÄW7G† bagd7j` bWVW`Gf[frÄ`fzVdck`W
S`Y`S[efz5VWVfZÄad[VdS`ÄfÄ`VÄVWbAbVbSdha` @Vg`S` `W?` adVWefVd` W`Ma` @Vg`S` `W?
?` adVWefVd` ÖVfÄfSkÄVbSdESHsYVWzshSYW` Ö

_____ : kbaFZÄeW

Dc]jhwÄ

>SfZÄad[VWV`gf[frÄ`WbAdÄW7GfVd`TSeÄVgd`^ZkbaFZÄeVcg` SYWf cg[Va[f bdWVdWg` WÄU]e]a` VS` e
Vde`La` V[frÄ` e [Uvdf`S` Vde`ÄhSgWVde`TÄ` Ä[Vde`VÄd[hÄe`V`ÄhÄ` V` WfV[hVde`bSdSbbadf` `SbcaTST[frÄ
cgWVde`ÄhÄ` V` WfeVbcaVg[eWfz

ž @gdfÄZÄfYbWgYh`ñ`h`]hÄ

6Vde`VWj bVde`egbb`Ä` WfS[dVde`VfVde`VÄX` [frÄ` eea` f` ÄUdeS[dVde`bagd[`^gfdVd`SfZÄad[VWV`_ [Vg
Ua`_bdWVdWVSV[e]ge[e]a` cg[hSeg[h]dVz

_____ >S`afVd[V

q]Va`d`Y

Bsd[e]_ b[UfrÄ`SbbVde` eUvVWafVd[Vde` z5ZScgW` V[h]Vg bVgfdUZa[e]dWfdWVWj S`fVd`Sf[hVde` SLZVWd`ag
`WbSeSLZVWd`g` T[`VfVWafVd[Vz>W[T`VfVxÄdVbSbae[T[frÄ`WWSY` Vd` ShWUg` WbcaTST[frÄ`VW` † z
>WbAdS UW_SfZÄ_Sf[cgWVWV`afVd[Vde` Wf bSdUa` eÄcgWfVW` /` j` † fîE[Vbdf] Vg T[`VfVf`ÄYS`
`^7H`Vg`>`ÄW` Va` Ufîg` WbVde`a` `WShVdeVSG/dVbVUf[hV` WfS`_SfVgdVWd[ecgW` SLZÄVdS[f bSe
/dVbVUf[hV` WfSLZÄVdS[fîg` T[`VfVz?` S[` fWS` fî eggbaea` ecg[`^k`Sf`g` WSgfdVafVd[Vde` -VS` eUWSe
g` T[`VfVLaÖfW` VfbVd` VfWWSY` Vd` ShWUg` WbcaTST[frÄ`VW` † z5`S[dV` WfUa`_` W`WbAdS UW
_SfZÄ_Sf[cgWVW>` Wf`b`geÄVhAVcgVWUaÖf`Vg T[`VfV/` j` † 0` fîfageUWj` cg[`Vde` f bSefÄe
ShVde`Sg d[ecgWVha` f bcaTST`W` Wf`fVfVd`VgdUZS` UWWWSY` Vd` z

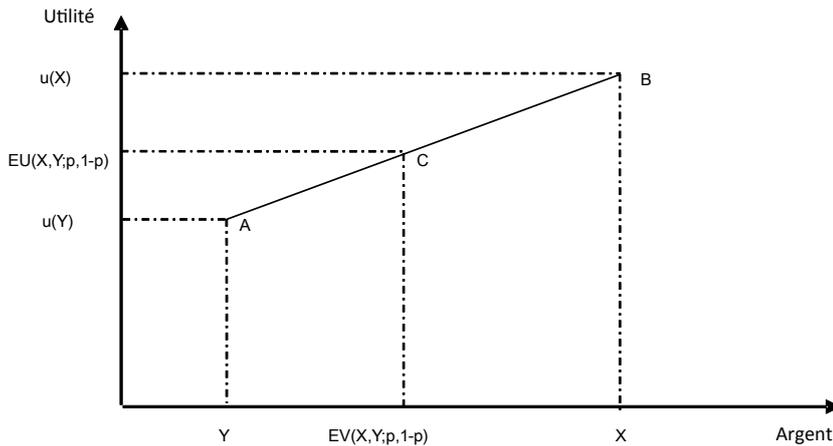
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f[hVde`,

SLZVWd`g` T[`VfVWV` †
SLZVWd`g` T[`VfVWV` †
`WbSeSLZVWd`VWT[`VfVz

7` gf[frÄ`S` f`Vde`VÄX` [frÄ` eVa` `ÄVde`bdÄUÄVW`_` WfUa`UZScgWafVd[VWVf`g` ÄhÄ` V` WfUa`bSdUWcg[
bVgfd`egdh[Vd`VS` e`WVgfd [VÄbVVS`_` WfVW`^` V[h]Vgž>S`dÄS[feSf[ä` Vg`Xgfgd`ÄhÄ` V` Wf



cgW ž; ^ VfbSeTVa[VWAHwabbVdg` Wad_ WY/b(UfWbagd/SXa` Uf[a` Vgr[(fA-` age
 bagha` ee[_b_W Vfv(dWcgW, g' fDg' fibagdfagf [V[hVgž7` XS[fi [^ VfbSe[
 [_badfS fVMeSha[dVWLa_ T[W g' fVfb`geYdS VMcgVg/ fi, `SeVg WUZaeVcg[
 `age[fAdVWVf` VWS[f cgW'gf[(fA Vg' WUWV Wvj dAeg` fSfeea[f b`geYdS VMcgWUW`VWVWV SgfdW
 / La_ bScA` fž> gr[(fA Vfb` ad[S`W, UMcg[[_badfWUWVf` VbEY` WWSV[VAdWUW
 g' fiZ`g' fD W`WUSeeW_ Wf Vfb`S`fVd` Sf[hVb` b`gfl f cgWS hS`Vgd dAW`VWWS
 V[VAdWUWV[^AZW`WUZS` YWbSdVjW_ b`WV Wjbd[_ S f Vb`hS`VgdW Va`Scd` ^ad/dW WUZS` YW
 bSe/WUW Vfb`hS`ST`MShWUZScgWfdS` eAd` Sf[a` _ a` afa` Vž6 WS_ _A` WSAa` t` S`hS`Vgd`STea`gW
 W`gfl[(fA` Vfb`Se`Sge[[_badfS` fVcgWbS`hS`Vgd`dVsf[hW`ag` SgfdW_ Wf V[fi` WUSeeW_ Wf WfdW
 gf[(fAebagdVfb` dAeg` fSfe V[VAdW` fefž



8 ž 7j W_b`WVWVdVSI[a` WfdVb` Uf[a` Vgr[(fA Vfb`SdWVf, b`ge`S`ea` _ W`SdWVf Vfb` Vb`A`Wb`ge` gfl[(fA`g`S`i
 S`ea`U`AV` U`V`V`ea` _ W`Vfb` A`W`AV`

>gecg`1` bAdVWf` age`Sha` e`AhS`gA` `S`Ta` ` `S` ` `AVW` `S` _ SghS[eMS` `AVbAbScA` _ Wfž6`Aead` S[e
 `ageagZS[fVW[a` eeSha[dLa` _ WfdVbAdVWfVdg` AhA` W_ Wf d[ecgAV`cgWd` W`agWS`bdaTST[(fA
 VS` e`WUSeeW_ Wf V`S`fVd` Sf[hVb` [U`VfS[Vž>`SeVf[a` eg[hS` fVb`Aba` V`1` U`VfVcgVfb`[a` Vfb`AdVW
 `S`fZ`Ad[VWV`gfl[(fA`Vb`AdAV`

ž @U`h`Acf]Y`XY`n`h`j]h`YgdAf`AY`

>SXa` Uf[a` Vgr[(fA` ageS[VW` U`SeeW` Vb`S`fVd` Sf[hVb`cg[ea` feC`Vb`U`V`V`Z` ŽV[dWU`VfS[Vb`V`SVhW[d-
 V`WbdaTST[(fA`AYS`W` fž@`AS` _ a[` d` e[Vb`S`fVd` Sf[hVb`cgW` ageV`W`ba` e`U`SeeW`ea` f` [U`VfS[Vb`Vf
 a` f`g` WbdaTST[(fA`W`fdW` Ad` V`g` t` age`bagha` e`dAeg` Vd` gfl[(fA`VAd[h`AVWV`SUF[h]h`d[ecgAVWV
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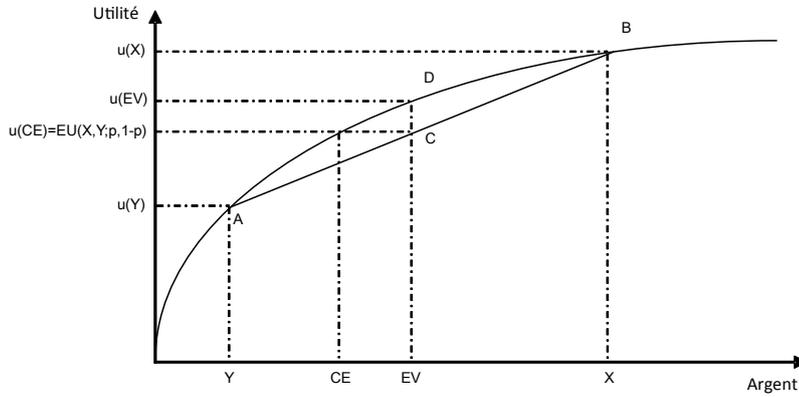
6S` e` afdWjW_ b`W`SUR[h]h`d[ecgAV`bAdVWfVWVj` dAeg` fSfebae[T`Vb`g` W`a` ` W`V`g` W_ SghS[eW
 S` `AV`Sg`j` cgW`ea` f`S`ea`U`AV`V`V`j` gfl[(fA`ebae[T`Vb`g` fVf`g` fieVb` `MbAeg` fSf`VW
 ^AhA` W_ Wf`1` `ShW[dž6`AX` [ea` eJ` La` _ WS`ea` _ W`SdWVf`YSY` AV`adeV`g` W`a` ` `S` ` `AV`bda`Ž
 TST[(fA` bfi`V`K` `S`ea` _ W`SdWVf`YSY` AV`adeV`g` W_ SghS[eMS` `AV`bdaTST[(fA`La` b`A` W`fS[dW
 Žbřž6S` e`U`V`Sed` ^SUR[h]h`d[ecgAV`bVg`f` AfdW`AX` [WLa` _ WJ`I`K`-b[Žbřž>`Vb`AdS` UW_ SFZ` _ SF[cgW
 /7HfVW`SUR[h]h`fA`S`V`V` AfA`V`AX` [WLa` _ W`Vb`Aeg` fSf` Vb`Ad`A`ShS` f`cgW`AhA` W_ Wf` `S`f` (Vg` ,

$$EV(X, Y; p, 1 - p) = 0,5 \times 100\,000 + 0,5 \times 60\,000 = 80\,000$$

>Vb`AdS` UW_ SFZ` _ SF[cgW`bVg`f` AfdW`fS`U`AV`gd` ^STe[eeW`g` YdSbZ[cgWVW` X`YgdW`žž
 @`AS` _ a[` d` W`AU`W`gd`Va[f`SY[d`ShS` f`cgW`Vb`Aeg` fSf` `W`ea[f`La` ` `g` W`STV`ba[` V`AhS`g`Vd` ^SUR[h]h`d
 d[ecgAV` ^ShS` UW`Sg` hg` W`b`bdaTST[(fA`eb`cg` [^`La` ` `Sg` ag` SgdS` U`ad`W`V`W_ Wf Vfb` _ AVbž>`gr[(fA
 Vb`Ad`AVWV`SUR[h]h`d[ecgAVWVf` `S` _ akW` W`Vb`gfl[(fA`e`VAd[h`AV`V`V`e` dAeg` fSfebae[T`Vb`ba` VAd`AV`
 bSd`S`bdaTST[(fA`cg` [e`e`Vb`bdaVg[eW`fž6S` e` ^V`W_ b`Vb`AU`AVW`fi` gfl[(fA`Vb`Ad`AVWV`SUR[h]h`d[ecgAV
 Vfb`Va` ` `AV`La` _ W`eg[f` ,



5a_ _ W age^Sha` eVj/b[cgÅbdÅUÄWV_ Wfi`Sbd[WWD[ecgWVf`SV[XÄdWUWVfdWVbÄdS UW
 _ SfZÄ` Sf[cgWVf`Äcg[hSWfUWfS[`/Va`U bagd3` `Vz@age`afa`ecgWSbd[WWD[ecgW
 Vef`g`W VgdVbVf[` WfWVWShVef`a` Sg d[ecgW,b`ge`Sbd[WWD[ecgWVf`ÄVÄVb`ge`W_a`fS`f
 SgcgW^SYWfVef`bdÄf` dV`a`UWd bagdÄh[fVd Wd[ecgWVf`S`Vd hVef`Vef`abf`a` eb`ge`eÖVef`ÄVÄZ
 BSdS[`VgdÄ UWfVW VgdVdWVÄVWWS`e`S`Ua` USh[fÄVWS`Xa`Uf`a` Vgf[`fÄ`SgfdW WfV[fib`ge`S
 Xa`Uf`a` Vef`Ua` UShVb`ge`SYWfVef`ShVef`WSg d[ecgW



8 ž Ea`Uf`a` Vgf[`fÄ`Vg` SYWfShVef`WSg d[ecgW

6 WS_ Ä`W`S` [ÄdW Vef`bdÄVÄdWUef`Vg` S_ SfVgd WWD[ecgWbVghWf`ÄfdWVdÄeWfÄVef`bSdg` W
 Xa`Uf`a` Ua` hVjWUdSd bagdUWVd [Vd`^gf[`fÄ`VWÄcg[hSWfUWfS[` Vef`fag`agde`b`ge`ÄVÄVb`ge`W
 ^gf[`fÄ`VWVbÄdS UW`SfZÄ` Sf[cgWV>Vef`bdÄVÄdWUef`Vef`SYWf` VgdVef`XSUMSg d[ecgWbVghWf`
 ÄfdWVdUd[fVef`bSdWef`Xa`Uf`a` eVgf[`fÄ`f`ÄS[dVef` Ua`_ WVÄX[` [WU]ZVef`ge`^gf[`fÄ`VbÄdÄWVef`g`W
 Ua`T[`S[ea` f`ÄS[dWgf[`fÄ`ef`ba`VÄdÄVef`W`Xa`Uf`a` WVgdVef`bÄTST[`fÄ`e`S[`ef`[`Vef`US[dcgWS
 eVj`W`Xa`Uf`a` bagd`ScgWVWÄcg[hSWfUWfS[` Vef`ÄYS`^gf[`fÄ`VbÄdÄWVef`S`Xa`Uf`a` f`ÄS[dVef`

F ZÄd[WVWgf[`fÄ`VbÄdÄW

Dc]joh WÄ

@agebagha` eÖÄeg` Vd`SfZÄd[WVWgf[`fÄ`VbÄdÄWUa`_ Wég[f` ,

ž ; ^Vef`baeef`T`WVW` VgdVd`^gf[`fÄ`bagdWef`ea`_ Vef`V`SdWf`Ua``gVef`-b`ge`S`ea`_ WVef`ÄVÄVb`ge`
 ^gf[`fÄ` VgdÄVef`VdS`Ä`VÄW

ž ; ^Vef`baeef`T`WVW` VgdVd`^gf[`fÄ`VbÄdÄW`g` W`SUF[h[fÄ`d[ecgÄWV`ba`VÄdS`f`^gf[`fÄ`VÄd[hÄWVef`
 hS`VgdVef`Ua``gVef`Wef`dÄeg`fS`febaeef`T`Vef`bSd`S`bÄTST[`fÄ`WVWgd`a`UjgdWUW

ž >Vef`[`V[h]Vge`ShVef`Vef`Sg`dVef`VUf[hV`Wf`S` SfVgdVef`Wd[ecgWbVghWf`fag`agde`dVef`VUf[hV`Wf`
 `S`S[ef`Wef`ea`_ Vef`eÖVef`cgWVef`ea`_ Vef`Äcg[hSWfVef`S[ef` UWfS[` Vef`VUW`bVgf`ÄfdWVdÄeWfÄ`
 Yef`SbZ[cgW`Wf`bSdg` W`Xa`Uf`a` Vgf[`fÄ`Ua` UShWdVef`VUf[hV`Wf`Ua` hVjVef`

<gecg`1`bdÄeWf`f`ageSha`ehg`Ua`_ Wf`dVbÄeWfVd`Vef`bdÄVÄdWUef`[`V[h]VgWVef`W`fVd`_ Vef`Vgf[`fÄ`
 Vef`Sgeef`Ua`_ Wf`SfZÄd[WVWgf[`fÄ`bVgf`U`SeeVd`Vef`ÄhÄ`W`Wf`ecg[a`f`g`W[ecgW[`UWfS[` Vef`7`
 UÄcg[`Ua`UW`WVUZa]j`W`ef`fgS[f`a` Wd[ecgWVf`V[`UWf[fgWV`SfZÄd[VÄUa`a`_ [cgWU`See[cgW`
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 Ua`_ badVfWcggWVbÄV[f`SfZÄd[V`6`WS_ Ä`W`S` [ÄdW`a`_ TdW`Ua`_ a`_ [ef`Vef`eagf[WVdS[Wf`
 cgWWT`a` UZa]j`VS`eWef`Ud`a`ef`S`Uef`d[ecgÄVef`WVdS[f`ÄfdWUaZÄdWf`ShWU`SfZÄd[Vef`



ž A Yg fYf`ñj Yfgjcb U f]gei Y

>VefgSf[a` eAla` a_ [cgVef_ b[fcgWf Mb'ge eaghWf VefLa` eAcgWUve d[ecgAVe5 Vef bagd UWS cg [^Vef_ badfS` fi bagdg` W_ g'f[fgWVWWS[ea` d VWLa`` SfgdV'Sff[fgWVWVLSUg` XSUMSg d[ecgW USd UWS S WefLa` eAcgWUve egd`Ala` a_ [W Vef` [hVsgj V [hVef[eeV_ W fi Vef LZa] V SeegdS Uve [V[hVgVef V` Sba f[fcgWbgT`fcgV? [Vgj La_ bdW VdWVLa_ badfV_ Wf Zg_ S` Sg` [hVsg [V[hZ VgV_ b[fcgWVef [fAdVefV` ^ShVef[a` Sg d[ecgWg ba [fVWgWVW` [V[hVg Vg` WbSof -V SfgdV bSof La_ bdW VdWVefLa_ badfV_ W fe V WeV_ T W Vef g` W_ S [AdVgf` W W W V Vd W Vd A ba` Vd W Vef cgVef[a` eb'ge YA` AdS Vef V W Vef Vd` ShS [V fA Vef_ a V A Vef BSd Vj V_ b Vg` WS` S'ke W W_ Sd LZA dVeg[Vef` S La`` S'ees U W W W Sff[fg W W S U M Sg d[ecg W W W V e V_ T W W W S b a b g S f [a` f V ` S_ [e W W gh d W W W S b a f [fcg W S f [a` S W _ b [fcg V c g W Vef Y a g h V d _ W_ W fe V a [h W f b d W V d W W La_ b W W V` [hVsg YA` AdS V ShVef[a` Sg d[ecg W b'gf f c g W W [hVsg [V[hVgVef

ž ž @ubUngj AVtbcA Af]ei Y

>Vef AgVefAla` a_ Afrd[cgVef cg [fWfWfV AhS'gVd` Sff[fgWVWA` AdS W S U M Sg d[ecg V e S b b g [W f e g d Vef WeV_ T Vef W W a` ` AVef b d a h W S` f W e W V f g d e a g V S U f [h f A e b S o f [U g V d e z B S d V j V_ b W [^Vef T [W La` ` g c g W Vef a g h d V d e V W V f g S` f W e f u Z V e V _ T ` S T ` V e f _ S [e c g [e a` f V j b a e A e` V e f` [hVsgj W W S` V d e V [XAdW f e a` f V e f e S [d V e c g [d V A f W f` W d [e c g W c g [e b d W` W f z 7` _ V e g d S` f U W V W V [XAdW U W V ` _ b a d f S` U W g d [e c g W` a g e b a g h a` e A h S'g V d` W [hVsg V ShVef[a` Sg d[ecg W_ g` S W f f d A e S h V e V S g d [e c g W W W d S [f W _ S` W d g` e S [d V A V W A` b a g d f d S h S` ^ V d V S` e g` W h [d a` ` W_ W f d [e c g A z

_____ 8g_ VjgdeVf` a` Zg_ Vjgde _____

9 Ya d'Y

>Vef dShSgj W W V d e L Z V H [e d g e X a g d [e a W f g` T a` V j W_ b W W V d e L Z V H [e d g e] Q: `e a` f U S e e A` V e a g h d V d e W V j Y d a g b V e , V e X g _ V j g d e V V e` a` Z g _ V j g d e z : `e a` f L a` e [V A d A` W S f W X g _ V d L a` _ W A f S` f g` L Z a] L a d V e b a` V S` f` g` L a _ b a d f V _ W f b'gf f` f` d [e c g W V a` f A f g V [A` S V [XAdW U W e S S o f [S W W f d W X g _ V j g d e V f` a` Z g _ V j g d e c g [a U j b S [W f W e b a e f V e` d [e c g V e z : `e a` f f d a g h A c g W V e X g _ V j g d e L Z V d L Z S [W f W e b a e f V e b'g e d [e c g A d` S [e A f S [W f _ a] e b S k A e c g W W e a g h d V d e` a` Z g _ V j g d e` V e b a e f V e e [_ [S d V e z ? A` W e f` V e W j Y d a g b V e V a g h d V d e A f S [W f d A` g` A d A e b a g d V e d [e c g V e c g [e W L a g d d S [W f i` W [hVsg W d A` g` A d S f [a` L Z W` V e X g _ V j g d e A f S [f [XAdVjgde; ^Vef` ` a f V d c g W V e W j Y d a g b V e V a g h d V d e X g _ V j g d e V f` a` Z g _ V j g d e f A f S [W f S h V e V e S g d [e c g W b S d U M c g [e A f S [W f f a g e V e W j d A` g` A d A e b a g d V e d [e c g V e W L a g d e z

EWa` S V A X` [f[a` b d A e W f A W b d A U A W W _ W f i g` S_ S f V j d W d [e c g V e S f f W V d S [f` A f d W b S k A` _ a [e c g g` W b V e a` ` W S h V e V S g d [e c g W b a g d` W_ A` W W _ b` a [d [e c g A z 6 V e b d A A d W U W e S f f [f g W V e X S U M S g d [e c g W V [h V W V f e _ A` W f` V e _ S d L Z A e W W _ W_ b` a [V V V e e S [d e V [XAdW f e z 7` g f [f e S` f U W V W [Xad` S f [a` W W e g b b a e S` f g` W e a d` W A` A d S W W W S X a` U f [a` V g f [f A` a g e b a g h a` e A h S'g V d` W` [hVsg V ShVef[a` Sg d[ecg W b S o f [d W W A U S o f e S S o f [S W f d W a g h d V d e S j U S d S U f A d e f [c g V e e V _ T ` S T ` V e / b S d V j V_ b W W e X g _ V j g d e f V S` e W e f e f g S f [a` e W f d S h S` ^ S` S` a Y g V e _ S l e a O` S b d a T S T [f r A W W e T V e V d V e f V [XAdW f V z @ a g e` a g e S f f W V a` e` f d a g h V d c g W b'g e S V [XAdW U W W W A c g W U W W e S U j [W W f e V g f d S h S` ^ V e f Y d S` W W b'g e W [hVsg V ShVef[a` Sg d[ecg W V e f A` V A z

6 V e S` S'k e V e [_ [S d V e a` f A f A d A S [e A V e V S` e V e L a` f j V f e V [XAdW f e z B S d V j V_ b W ; d [8 d [W V V f ? S c z S` ^ z 4` g _ W a` f g f [f e A` V e V a` ` A V e L a [e A V e e g d` V e T [W e V i S h a [d e V e _ A` S V e b a g d A h S'g V d` S` S f g d W W W V j d X a` U f [a` V g f [f A` a g e b a g h a` e A h S'g V d` W` a` V j g d e V a` ` A V e L a _ b d W S [W f V e U S z d S U f A d e f [c g V e e a U j a Z A L a` a_ [c g V e V V A` a Y d S b z [c g V e Z S T [f g W V e V e _ A` S V e z 7` ^ V e L a _ b a d f S [W f A Y S W _ W f V e [Xad` S f [a` e e g d` V e d W W g e V i` V e T [W e f W V e c g W S c g S` f f A V i` S` S f g d W W e S h a [d e V V V e b S e e X e L a _ b f V e W T S` c g W a T f Y S f [a` e d S e e g d S U W e h [W S U f [a` e L a` V e b d a b d V e V e z

9 V a d W 9 z E I b [d a` g [i S g f [f e A V e V a` ` A V e W e A d [V e L Z d a` a` a Y [c g V e e g d` V e S e e g d S U W e [_ a T [f A d V e b a g d f V e V d V [XAdW f V e X a` U f [a` e V g f [f A` V V A V d [_ V d U W V e c g [L a d V e b a` V S [W f W_ [V j S g j V a` ` A V e N i b f c a` Q 4 V S g L a g b W U Z V d Z V j g d e a` f L a` e [V A d A` V e b d [_ V e V S e e g d S U W L a` _ W j` W _ S` [A d W A h S'g V d` S h a` a` f A V g` S W f W e a g e b [d M g` V S e e g d S U W V W a _ T d W W W A U S o f [a` e L a` _ W j` W` V [U S f [a` e g d` S b d a T S T [f r A c g g` S U j [W W f e W b d a V g [e V z > W_ S d L Z A W W S e e g d S U W b S d

@age` W d W f d a` e b S e V S` e V e V A f S [e e g d` S X a d` W c g W b V j f b d W V d M g` W a` U f [a` V g f [f A` A S` _ a [e h a [U g` V j W_ b W e L` _ S [f` a` e g` W a` U f [a` V j b a` W f [W V W` S z E [W L a V X U W f S W e f V e _ A` S / f` S X a` U f [a` W e f` A S [d W` S Y W f S g` W S f f [f g W V f d V S U M S g d [e c g V e E] S V e f e f d [U W _ W f b'g e Y d S` V c g W i` ^ S W f V e f S h V e V S g d [e c g W S f` e j b'g e S V e f A` V W A` b'g e` S X a` U f [a` W e f L a` U S h W W V W [hVsg V ShVef[a` Sg d[ecg W V e f A` V A z E [S` f S a d e` ^ S W f V e f` S_ S f V j d W d [e c g V e z



VjWV bW/h[W/ha[fgdWag eS` fAfWf eaghWf gf[teA`La__ WTSeMbagdAhS'gVd`VfSff[fgWVWXSUMSg d[ecgWAdW_S` Q

7` ea__ W/S` S` [AdWZST[fgWVWV`AhS'gVd`^Sff[fgWVWXSUMSg d[ecgWVf` ,

bdWV [AdWV`WfWVegbbaeVd`g`WAd`WV`Ad[cgWV`Uf[a``WVWbagd`S`Xa`Uf[a``Vgf[teA`cg[bVjg`fAdWV`hVjWV`LShVag`f`AS[cdVWV`WVWVWVUf

VWVWj [A`W`WfV`AhS'gVd`WVWVUfSg`akW`Vg`WS`SkeWV`a`_`fAd[cgWVWVWVU[e]a`e b[e]VW`e[fgSf[a``V`UWVfVWV

>S`La`U`ge[a`Y`AdS`WV`cg`g`WVdS`WV`Sadf`A`WVS`babg`Sf[a``V`ShVd`V`Sg`d[ecgW`Sge[e]T[W`VS`eV`La`fVj/fV`Y`AdS`g`cgVebAU`[cgV`5`WfkbW`fVgVW`Ah`W`V`S`W`W`f`g`X`S`f`_`bad`S`f` , [^Vj[efWV`U`SeeV`WbV`ea``V`V`X`Ad`W`f`V`bagd`cg[`W`[hV`Sg`V`ShV`e]a``Sg`d[ecgW`V`V`X`Ad`W`f`z`>V`X`S`U`f`g`d`U`A`e`a`f`V`V`a``A`V`e`a`U`[a`Z`V`_`a`Y`d`S`b`Z`[cgV`f`V`V`e`cgW`>V`W`V`W`V`/`S`b`c`X`V`e]a`f` ^`AV`g`U`S`f`[a`f`S`X`d`f`g`W`S`e`f`g`S`f`[a`Y`A`Y`d`S`b`Z`[cgV`V`e`V`e]T`[f`f`A`e`d`M`Y`[V`j`e`V`V`Z`B`S`d`V`j`W`b`W` age bagha`ea`TeV`h`V`V`V`X`Ad`W`U`W`f`d`W`Z`a`_`V`V`V`X`V`_`V`e]`W`La`_`bad`W`V`f`d[ecg`A`V`f`[`X`g`W`U`A` b`S`d`>V`W`ag`e`[`d`V`V`e`S`T`V`f`ag`f`S`g`a`Y`W`V`j`[e`f`W`U`W`V`S`b`V`e`a``W`V`Z`

ž ž @YI dAf]a YbUjcb

G`V`S`g`f`d`S`b`b`c`d`L`Z`W`L`a`e`[e`f`W`_`V`e`g`d`V`V`e`[h`V`S`g`j`[`V`[h`V`g`V`e`W`V`S`h`V`e]a``S`g`d[ecgW`b`S`d`V`j`b`A`d`Z`_`W`f`S`f`[a`z`5`V`e`f`V`g`V`e`e`a`f`Y`A`AdS`W`W`f`_`a`[`e`S`_`T`[f`V`j`e`V`e`cgW`V`AhS'gSf[a``W`V`S`X`d`_`W`V`AdS`W`V`W`S`X`a`Uf[a``V`gf[teA``W`V`e`W`a`L`S`[e`W`f`e`g`d`V`e`AhS'gSf[a``e`a`L`S`V`e`W`V`[h`V`S`g`j`V`ShV`e]a``S`g`d[ecgW`U`V`e]Z`Z`V`[d`N`g`W`b`S`d`[W`V`W`S`L`ag`d`T`W`b`g`f`f`cgW`f`ag`f`W`S`L`ag`d`T`V`Z`6`S`g`f`d`V`e`f`V`g`V`e`W`c`g`f`W`f`e`g`d`^`S`f`f`[fgWVWXSUMSg`d[ecgWV`V`V`V`f`g`S`f`V`e`f`V`e`f`e`bagd`h`a`[d`cgW`V`V`a`Uf[a``V`gf[teA`L`ad`V`e]a`V`W`_`[V`j`S`g`j`V`a``A`V`e]V`b`A`d`_`W`f`S`V`e]3`T`ad`V`a`e`_`S`[`f`W`S`f`cgW`c`g`V`e]z`g`V`e`W`U`V`e`_`f`Z`a`V`V`e`g`f`[teA`V`e`bagd`_`V`e`g`d`V`^`S`f`f`[fgWVWXSUMSg`d[ecgV`7`^`V`e`e`a`f`S`j`A`V`e`e`g`d`^`a`T`e`V`h`S`f`[a``V`g`L`a`_`bad`W`V`W`f`V`S`e`W`e`[fgSf[a``e`d[ecg`A`V`e`W`^`AhS'gSf[a``V`e`d`A`b`a`e`V`e`^`S`[W`V`W`c`g`V`e]f`[a``S`[d`V`e`ag`V`V`j`b`A`d`[W`U`V`e]5`Z`S`d`V`e]3`z`a`f`W`E`g`e`S`>S`g`k`e`V`e`a`f`b`W`L`Z`A`e`g`d`V`e`g`V`V`S`e`g`W`j`b`A`d`[W`U`V`e]S`e`A`V`e`g`d`V`e`a`f`V`d`[V`e`M`a`f`W`>S`g`k`Q`>V`e`b`S`d`[U`b`S`f`e`f`S`[W`f`[`h`f`A`e`^`L`Z`a`[e]d`b`S`d`_`[`g`W`[e`f`W`W`V`a`f`V`d`[V`e`h`a`[d`f`S`T`V`S`g`z`f`i`V`e`^`A`V`U`f`[a``V`d`^`S`c`g`W`V`W`V`e`W`V`j`a`b`f`[a`e`/3`ag`4`f`[e`b`d`A`V`e]W`f`z`

A bf[a` 3	A bf[a` 4	6 [X`Ad`W`U`W`V`f`d`W`V`e]Y`S`e`V`e]b`A`d`A`e
1/10 aX2.00€, 9/10 aX1.60€	1/10 aX3.85€, 9/10 aX0.10€	1.17€
2/10 aX2.00€, 8/10 aX1.60€	2/10 aX3.85€, 8/10 aX0.10€	0.83€
3/10 aX2.00€, 7/10 aX1.60€	3/10 aX3.85€, 7/10 aX0.10€	0.50€
4/10 aX2.00€, 6/10 aX1.60€	4/10 aX3.85€, 6/10 aX0.10€	0.16€
5/10 aX2.00€, 5/10 aX1.60€	5/10 aX3.85€, 5/10 aX0.10€	-0.18€
6/10 aX2.00€, 4/10 aX1.60€	6/10 aX3.85€, 4/10 aX0.10€	-0.51€
7/10 aX2.00€, 3/10 aX1.60€	7/10 aX3.85€, 3/10 aX0.10€	-0.85€
8/10 aX2.00€, 2/10 aX1.60€	8/10 aX3.85€, 2/10 aX0.10€	-1.18€
9/10 aX2.00€, 1/10 aX1.60€	9/10 aX3.85€, 1/10 aX0.10€	-1.52€
10/10 aX2.00€, 0/10 aX1.60€	10/10 aX3.85€, 0/10 aX0.10€	-1.85€

F ž 6j LZaj WwVdV`S`e`a`U`A`e`°`V`e]Y`S`e`V`e]b`A`d`A`e`X`S`T`V`e

>V`e`b`S`d`[U`b`S`f`e`f`S`[W`f`b`S`K`A`e`V`a``V`j`d`e`d`A`g`f`S`f`e`a`T`f`W`g`e`a`d`e`V`W`S`a`f`V`d`[W`L`Z`a`[e]V`Z`B`S`d`V`j`W`b`W`g`b`S`d`[U`b`S`f`c`g`[L`Z`a`[e]f`^`a`b`f`[a``3`e`g`d`S`[Y`W`l`e`V`S`[f`b`S`K`A``Sh`W`j`g`W`b`c`d`T`S`T`[teA`W`V`_`f`ag`f`Sh`W`j`g`W`b`c`d`T`S`T`[teA`W`V`_`z`>S`f`d`a`[e]A`_`W`L`a`a``W`_`a`f`d`W`S`V`[X`Ad`W`U`W`V`f`d`W`V`e]Y`S`e`V`e]b`A`d`A`e`U`V`e]Z`Z`V`[d`W`H`/`a`b`f`[a``3`f`i`7`H`/`a`b`f`[a``4`f`i`z`-`L`Z`S`c`g`W`a`[e]c`g`W`S`V`[X`Ad`W`U`W`V`f`b`a`e]f`[h`W`V`e]c`g`S`f`d`W`

; ^`V`[f`_`bad`S`f`W`b`A`U`[e]V`d`cgW`U`V`W`V`V`d`[Ad`W`L`a`a``W`W`S`[e]S`f`b`S`e`b`S`d`[W`V`e]`e`f`d`g`U`f`[a``e`V`j`b`A`d`_`W`f`S`V`e]



bdW [AdVē afVdVēfīg` bSdf[U]bS` f dSf[a` ` WVf` VgfdWVSUMSg d[ecgWVhdSf bAdVē abfja` 3` 1`
` abfja` 4 -Sgeel bagd Vē eJ VVd [AdVē afVdVē [^VhdSf LZa[e]d` abfja` 4] LsdWVbdaVg[f g` YS`
Vē bAdēgbAdVgd` 1` abfja` 3z6 Vb`ge] bagd` SbdW [AdVē Y` Vē Vg`g` S_ SfVgdVWd[ecgW] Xd_ Ā
LZa[e]dSf` abfja` 4 -VfVS` e` S Wd [AdVē Y` Wfagf` W_ a` VVhdSf LZa[e]d` abfja` 4] Lsd[` Vē
UhdSf` cg WVVagd [f g` YS` b`geĀVēcgW` abfja` 3z

>Vē SgfVgdea` f_ a` fdĀcgW_ Ā_ VShVWVē W Vgij Sgeel TSe` WVS` _ Sj [_ g_ ĀFSf VW` fi Wh[da` ,
 . Vē bSdf[U]bS` fe ĀFS[Wf ShVdVē Sg d[ecgW`
 . ĀFS[Wf S_ SfVgdVWd[ecgW`
 Vē Vd [Vdē . ĀFS[Wf` VgfdVē XSUMSg d[ecgWz

5 VU[dV XadW[VĀVcgWS_ SadfĀ Vē bVdē` ` Vē Vē ShVdVē Sg d[ecgWz@ĀS` _ a] d` VW a_ TdVgij
SebVfēea` f` 1` bdWVdWV La_ bfWVbSdVWV b` Vē Vē ZUMcgWV [hVsg V ShVdē]a` Sg d[ecgWVē W_ Ā_ W
bagd Vē Ydē Vē ag Vē bVfVē ea` _ Vē V SdWf 1 >Vē bSdf[U]bS` fe dVLa_ badWfz [ē V[XAdV_ Wf
ē] Vē cgVē]a` eea` f eVg` WV Wf ZkbaZĀf[cgVē ag ē] WVē [b`cgWf VW` SdWf dĀW1

____ 8S[T Vē YS` e vs Ydē YS` e -YS` edĀVē vs YS` e ZkbaZĀf[cgVē _____

9 Ya d'Y

>Vē SgfVgdea` f VVUfGĀ Vgde Vj/bAd[VU Vē ShVWVē hS Vgde b`geĀVē Vē W egTēf f gS f VV` 1`
Vf` W abfja` 3 VV` W abfja` 4z> adcgWVē W Vgij ĀVē Āē ĀFS[Wf ZkbaZĀf[cgVē W`
` [hVsg V ShVdē]a` Sg d[ecgWĀFSf eV T`ST` W Uwg [TSeĀ egd Vē W Vgij dĀVē TSez5 VbWVS fi` adcgWVē
W Vgij ĀFS[Wf ĀVē Vē dĀVē Vē SgfVgdea` fa Tē Vē Āg` W dVLa [ē S UWS` e` W [hVsg V ShVdē]a` Sg
d[ecgWzG` f[Vdē Vē bSdf[U]bS` fe` ĀFS[Wf bSbdĀfē 1` bdWVdWVē d[ecgVē Vg fagf , [ēa` f LZa[e]` abfja` 4
eVg` WV Wf VS` e` S Wd [AdVē cgVē]a` z

G` Wj/b`[USf]a` baee[T` Wbagd UMLa_ badfV Wf bagdSf f ĀfdVcgWadecgWVē YS` e bafWf[Vē ea` f
ĀVē Ād` age VVW a` eb`ge ShVdVē Sg d[ecgWz>S V[XAdV UWWfdVg` YS` UhdSf` V Sg_ a] e
Vf g` YS` bafWf[VWVē Vg` W Vf Xs[f cgW` abfja` 4 Vē g` W abfja` d[ecgĀWVē cgW` a` ` WS
LZa[e]f bSe` S`ĀVdV Wfz> adcgWVē W Vgij ea` f ZkbaZĀf[cgVē Vē bSdf[U]bS` fea` f fVVS UW ĀfdV
b`ge Uag dS Vgij Vē fkb[cgW Vf eage Zēf [Wf` gēcg aO [ē [da` f bagd Āh[Vd Vd[ecgVg` Wā[ecgW
Vē W Vgij eVdē` f dĀVē z

? S`YdĀ Vē dĀeg fSfedV SdGst Vē Vē Vj/bAd[VU Vē ĀLā` a_ [cgVē [b`cgS f Wē dĀLā_ bW dVē_ aZ
` ĀFS[dVd` age Sha` e TVē a [f VS` e VV a_ TdVgē Vē e f gS f a` d V g` W_ S [AdVē W b`geē [b`W b`ge
V[dVWVW` _ a] ea` AdVē W SUĀVd 1` ^ [Xad_ Sf[a` egd` Sff[fgVWVWZSLg` XSUMSg d[ecgWz; ^ Vj[efW
VW a_ TdVgij ea` VSVē V[XAdV fe V[ēba` [T Vē Vg f [ē Āē bSd Vē LZVdVgde z@ĀS` _ a] d [^ dVē W
` ĀUhdS[dVWVhS[Vd cgWVē dĀba` eVē 1` Uē cgVē]a` S[dVē` a` ZēĀ_ g` ĀĀē Vē ZkbaZĀf[cgVē ea` f
VWVĀVē [V[USfVgde VMLa_ badfV Wf fedĀVē VS` e Vē e f gS f a` edĀVē Vē z

6 aZ_ W Vē S`za` f dĀS[ēĀg` WĀfgWV TSeĀ Vēgd` MbS` WeaUjāZĀLā` a_ [cgWS` W` S` V/EA 7Bfi cg[
Lā` f[Wf g` YdS` V` a_ TdWVWā` ĀVē_ VēgdS f` Sff[fgVWVSUMSg d[ecgWVS eV[XAdV feLa` fVj/Vē
/ĀĀ` ĀdS` t` Lā` Vg[fWd g f[ĀdV SXS[dVē X` S` U[AdVē ebadfe Vē` a[e]dē eS` fĀ Vē USd[ĀdV WZz> VbS` W
Lā` f[Wf ĀYS` W V V SgfVē [Xad_ Sf[a` egf [Vē fV Vē cgW> YV/ Vē Vj/W` S` Xadfg` W Vē dVWgd` V
fdShS [t` ĀVgUSf]a` t` ĀVgUSf]a` Vē bSdV fed` W a_ TdWV` > YVWVē WXS` fed` ĀFSf U[h` t` SdMf]a` t` W
ba[Vē] S`fS[` W` ĀFSf Vē S` fĀ Vē SgfVē Vē aZ_ W Vē S` z >Vē SgfVgdea` f hAd[XĀ]ē g` VcgVē]a`
fagfVē [b`WbaghSf VĀLb[dVWMLa_ badfV Wf dĀW` ade V g` Wj/bAd[VU WShVg` W` afVd[Vg`
bVg eV T`ST` W UWVbĀS[ēĀVbSd: a` f Vē >Sgckz> Vē dĀba` eVē 1` S` afVd[VWj/bAd_ WfS` WāO Vē
bSdf[U]bS` fe baghS[Wf YSY` Vd` gēcg 1` fia` f dĀhĀĀcgW,

Sgij S Wfagde VV . WVS babg` S f a` ĀFS[f ShVdVē Sg d[ecgW`
 . ĀFS[f` VgfdV`
 . S_ SfVgdVWd[ecgWz

@a` eVg` WV Wf Vgde dĀeg fSfe Lā` LādV[S[Wf ShVW Vgij VV` a` f Vē >Sgck Vē ShVW V SgfVē ĀfgVē
[badfS` fVē egd` Sff[fgVWVSUMSg d[ecgW` S[e Vē SgfVgde a` f Sgeel f dghĀ cgWVS dĀba` eVē ` S
cgVē]a` VV` Sff[fgVWVĀ` ĀdS` WVSUMSg d[ecgW] 5a_ _ Wf dĀSfē dMz hage XSUMSg d[ecgWV VĀ` ĀdS` 1`
/ēgdg` WĀLZ W V W V 1` fi ĀFS[f g` [V[USfVgd X`ST` W VMLa_ badfV Wf d[ecgĀVS` e` MUSEV g` WafVd[V

G` bVf f bagd VVfS Vē Vē VgWd VĀFSf Vē bSdf[U]bS` fe Vā` f Vē dĀba` eVē ĀFS[Wf [Lā_ bSf[T Vē ShVW Vē f dā[e VĀX` [f]a` e
VW` Sff[fgVWVSUMSg d[ecgWz



1 W Vg dAVez: ^Vef [fAdVes f VVdVdVd S VAVU] S[ea` WVe dAeg fSfe 1 ^S cgVef[a` dVsfhW ^Sff[fgVWA` AdS VWSU Sg d[ecgV Sg dV SdV VVe Va` `AVe V[eba` [T VVe La` Uvd S f Uv fS] VVe LSfAYad[Vez 7` dAV WVA` AdS W VVe XV _ VVe ea` f b'ge ShVVe Sg d[ecgVcgW VVe Za _ _ VVe- ^ShVVe[a` Sg d[ecgW eSUU fgVShWU ^>YW Sha[d VVe bSdV fe T[W ZAVcgAe Xs] f cgWUZSug` Vef b'geaghVef 1 ^Sbd[eVWW d[ecgW VV Vb'ge egbdV S fl Uv ef cgW VVe bVea` ` VVe VVWdS VVfS[^Vb` f VVVS UW AfdV_ a[e ShVVe Sg d[ecgV

ž ž Ei fMb YgH] XYg{ UbcA U]YgCE3

FagfVVe UVe AfVVe` age bVd VVWf VVLa _ bdV VdVLa _ _ Wf UZSug` dASY[f XSUM VVe efgSf[a` e d[ecgAVe- bSdV VV_ bV` age bagd[a` e SffW VdVVe XV _ VVe cg WVe ea[Wf b'ge bdgVW VVe VMS f VVe VAVU[e]a` e d[ecgAVe- gecg S'adl ^SfZAd[VAVa` a_ [cgVcgW age Sha` e VAVU[f VVe gbae VcgW VVe Sff[fgVVe XSUM Sg d[ecgVea` f ZAfAdA YAV VVe _ Sje e fS V SdV[eAVe BSdLa` eAcgW fl` age Sha` e egbaeAcg WUZSug` Vef ea[f | fag'agde` ShVVe Sg d[ecgW ea[f | fag'agde` WU] 1 bdV VdVVe d[ecgV [VAVVVS _ _ Wf Vg fV_ beag VWS efgSf[a` f VV` afdV_ aVAVZAd[cgW] U'gf UVe AA_ Wfez

>SfZAd[VWW'gf[fFAVe bAdAVS AfA ^SdVW Wf gf[fEAVS e fagfVVe VVe TdS UZVVe VVe eU[VWUVe AVaZ `a_ [cgVVe VVe AVa` a_ [efVea` f AfA VVWVhV fe VAVV eVgde VVe S hS[V[fAZ? SYdA UMSI g` YdS V `a_ TdV Sd[VUVe VAVa` a_ [WV/bAd[_ WfS WV La _ badVW WfS WTS eAbSdV VV_ bVegd WfVShS[^ VVe bekUZa` aYgVVe =SZ` W S` S V FhVVe] kl a` f dAVAVcgWVS eVW a_ TdV Uj U Sd VVe bAV[Uf[a` eVW ^SfZAd[VWW'gf[fFAVe bAdAVea` f ekeFA` S f[cgVW Wf h[a AVe MSZ` W S` V FhVVe] k t t Q

3[e] VS` e WUZSb[fdVeg[hS fl` age S Skea` eg` WeAd[VWWVdAeg fSfe W b[d[cgVVe VV VV/bAd[_ Wf Sg] cg[eAVa[Y` Wf VVe bAV[Uf[a` eVWS fZAd[VWW'gf[fFAVe bAdAVe @age` age XaLS[ea` eegd VVe [dAVYgZ ^Sd fAdAeg fS` f VV_ af[hSf[a` ebekUZa` aY[cgVVe [VAVVVS fVe Vg La` fVJ/VVU VVe Z' ZV[dVcg[ea` f [VAVVVS fVe Vg` USVdVebAVU] XcgV VV cg[bSdLa` eAcgW fl ea` f Sbb[UST VVe VS eVW a_ TdVgeV U[d]a` e fS UVe V[XAdV fVe @age SbbVb` e UVe [dAVYg/Sd fAe VVe | S a_ S[Ve` ž

3` a_ S[VW

8A b]jcb

7` eU[VWUVe AVa` a_ [cgVVe g` VS a_ S[VWVf g` La _ badVW Wf cg[` Vef bSeLa` Xad V Sg _ aVAVZAd[cgW USee[cgV

> AfVWWUVe S a_ S[VVe bSdV Sbbad f 1 ^SfZAd[VWW'gf[fFAVe bAdAVS La` Vg[f 1 ^SbbSd[f]a` Vg` W fZAd[VMS fVd S f[hVLa` ` gWeage W a_ VVZAd[VWVVe bVdVbVUf[hVVe cg[eVMS bAVe W fAVWS e W UZSb[fdV ž@AS` a[e fagfVVe VVe S a_ S[VVe` Vea` f bSeeg XVeS` _ Wf dAVS VgVVe VS` e Sbabg SZ f[a` bagd AfdV] U'geVVe VS` e UVfW aghV VVZAd[VWVA` AdS W bSdLa` eAcgW fl Sg UZSb[fdV i` age bAVe Wfa` e V SgfdV VAVh[Sf[a` e Vg La _ badVW Wf dSf[a` ` Wcg[` a` f bSe W Uad VAVa` aVAV[eAVe _ S[ecg[a` f g` Xad[_ bSuf egd ^Sbd[eVWWVAVU[e]a` W efgSf[a` V [Uv f[fgVVe





8]j Yf[YbWgYbhfY `Y a cXÀY fU]cbbY Yh`UfÁU]hÁ

6 Vē dĀeg fSfe W b[dcgVē egYĀdWf cg W YĀ ĀdS^Vē YWeea` f ShVēVē Sg d[ecgVĀG` WĀ [Y_ W] fĀZ dVēS fVbSobScSĀ UbbWVS fcgS Vg` W_ Ā_ WbVēea` ` WbdWVg` WSeegdS UMcg[LaŌFWShS` fSYW cgWVd[ecgVcG WVWlaghdmLa_ badfW_ Wf ShVēVē Sg d[ecgVĀG` SLZAFWg` T[^Vf WwafVd[VcG[LaŌFW VShS` fSYWcgWWTĀ` ĀX[UWVēbĀdĀLa_ badfW_ Wf S_ S[VgdVWd[ecgVĀE[` age egbbaea` ecgW`SfZ f[fgVWVg` SYWf ĀLa` a_ [cgWVēf bSdVj/W_ b`VWVfag`agde Āh[fVd Vē d[ecgVē [^ WVhds[f S`ade `S_ S[e`agVd`1 `S`afVd[VWVfagf SgfdWLa_ badfW_ Wf bVgjf ĀfdWbVdAg La_ _ WdcSf[a` ` Vē

6 S` e`WUZSb[fdMbdĀĀWVf` ageSha` ehg `Vd` ^WV`ShVē[a` Sg d[ecgWVS` e`Sbd[eVWVWĀU]eja` W e[fgSf[a` V[Uvd[fgVĀZ>Sb`gbScf Wē[V[h[VgedVZ[Y` Wf`1 Seeg_ Vd Wē d[ecgVē VfbĀĀdWf Vēabf[a` eēŌVēcgS` V`WĀeg`fSf` Vēf bSefafS`W_ Wf Uvd[S]` ž

6 S` e`WUZSb[fdW` agebdĀeWfa` eVēS` a_ S[Vē Vē egbbaea` e`1` aghVēg cgWUZScgWā[ecg [^k S` g` d[ecgW`VēbdaTST[fĀeVēS`fVd` Sf[hVēea` fLa` `gVd UVēZ! ŽV[dMcg [^` k S`Sglj` W[Uvd[fgVW egd`ShS`VgdVj/SUfWVēbdaTST[fĀeLa` Uvd` ĀVē ž

ž @Uj Yfgjcb , `UdYfhY

G` WVēS` a_ S[Vē Vē b`ge[fĀdVēS` fVē Vē dĀUgdWfVē Vg La_ badfW_ Wf Zg_ S[` XSUMSg d[ecgW Vēf` ^ShVē[a` `1` ^SbVdVfV7` fVd_ VēV[_ badfS` UMW eU[WUēĀLa` a_ [cgVē Vē W b[eVWVWĀU]eja` W e[fgSf[a` V[Uvd[fgVWVWVēf W Wg[Ā_ Wbaef[a` † gēfWVd[ĀdV`ShVē[a` Sg d[ecgVhgVW eVU]a` ž ž

> ShVē[a` `1` ^SbVdVfWēbdaVg[f VS` eVē e[fgSf[a` eaŌSg_ a[eg` WVēbae[T[fĀeS`fVd` Sf[hVē V]eba` [T Vē bagd`WĀU[VgdWfdSĀ Wg` WV[_ [gf[a` VēS` d[UZVēVēB`gebdĀU]eĀ` Wf WēgbbaeW cgWVē e[fgSf[a` eVS` e`VēcgW`Vēg` [V[h[Vg bagdS[f egT[dg` WbVdVēa` f bVdAgVē V[XĀdV_ Wf cgWVē e[fgSf[a` ecg[_ Ā` Wf`1` YS[ž5a_ _ Wē`SZ` W_ S` Vēf hVē] k` ^SX[d_ S[Wf ^[VĀVēagfWS` f` ^ShVē[a` `1` ^SbVdVfWēf cgW

>WēbVdVfWēbSdS[eafWfb`ge_ W`SĀS` fVēcgWVēYS[e`Ācg[hS`WfēMSZ` W`S` Vēf hVē] k` @

7` V SgfdVē fVd_ Vē` ^SX[UR[a` eg[fW` g` WbVdVfWēf b`geĀVĀMcgWVb`S[e[d`Ā`1` g` YS[Vg_ Ā_ W ad/dWVWdS` Wgčž

_____ BvdUvb[f]a` VēbVdVfVē Vē VēYS[e` _____

q Ya d`Y

: _ SY[W cgWhageShW`YS` Āg` Wha[fgdW`g` WhS`VgdVW ž? S[fWS` f[_ SY[W cgWShafgdW Vēf`VĀrcj[fWVS` eg` SU[VWfz4[W cgWVS` e`Vē Wg[e[fgSf[a` eYS[Vēf bVdVfWēa[Wf Vg_ Ā_ WbdVdWVW YdS` Wgčž` WēVf[_ Wf` ĀYS[fXVWS`bVdVfWVWShafgdWēVdS`bVdVfWēa[Wf Vd_ VēStea`ge[VW_ S[ĀdVb`ge` SUbtjWcGWS`dĀSU[a` baef[hW` ea` YS[ž

5 Wbd[U]bWbēkLZa`āY[cgWYĀ` ĀdS↑cg[bagdS[f ĀfdW[Ā`1` afdM[ef[UfVWēgch[WXS[f cgWVēSYWfe ShVēVē Sg d[ecgVēWLa_ badfWfV[XĀdV_ Wf VS` e`S_ Ā_ Wē[fgSf[a` eVā` ^SXSĀ` Va` f`WVēW b[eVWfW` ea[f La_ _ Wg` WbVdVfWēa[f La_ _ Wg` YS[` a` ŽdĀS`[eĀž

@agefdSf[a` eVS` e`WUZSb[fdMg[hS` f` ^ShVē[a` `1` ^S_ T[YgēĀ]cg[Vēf` WĀe[dVaTfW[dVē[` Xad_ Sf[a` eegdWēbdaTST[Ž fĀe[La` `gVēž



BdWa` eg` VjWV b`WTSeÂegdVWdW [eVWVWV_` S'adSf[a` ež

___ DW [eVWV_` S'adSf[a`

9 Ya d'Y

:_ SY[W g` WefrgSf[a` eL_ b`W, hageAfvWegd`Mba[f V SLZVWd g` F Žez[cf cg[LaOwV Wf egd VtZgW hagebWdW TĀ AXU[VdVg` WdW [eWWW . ž- 'SUS[eW hageVĀLagh dW cg W XSf[[^ k SbSeVWdW [eV 5a_bSdW UvVWefrgSf[a` ' UvVWĀO hagebWdW SLZVWd g` F Žez[cf' Wf cgWVWVWd hageV[fcg [^k Sg` W_ S'adSf[a` Vg bdj WvSdf[UvWVcg [^LaOwV_ S' fWS f ž

; ^Vf ZST[fgWVW Wf b`geXSU[WWWbSedVdVg` WdW [eVcgWV S'UWbVdVg` VZSgeeWVWbdj] t_ Ā_ W e['SV[XĀdWUWVf 'S_ Ā_ VZSdLa` eĀcgWf[VS` e`SbdV [ĀdVefrgSf[a` t hageS'UWbVdVW cgS` V _ Ā_ WbdTST`W Wf V SLZVWd Wf Žez[cf S'adcgWWS` e`S'Wvj [Ā_ WefrgSf[a` t hage` WWWWVW bSž

G` SgfdWjWV b`WWWUWkbWWWLb_ badfWV Wf S ĀfĀ Xgd [bSd = SZ` W_ S t = ` WfLZ W F ZS`Vd Msz` W_ S WfSž Q; `ea` f WV_ S VĀ ^Sh[eVWbSdf[U]bS` fe bSdWfdV[WefĀĀbZa` [cgVd egd`Vgd XSĀa` WvgyVd`VdSUF[a` ebd[eVVS` e`VdWvj efgSf[a` eeg[hS`fVd,

___ >Wes'S[dVdĀVWV` Wbagha[dV SLZSf

9 Ya d'Y

G` WeaU[ĀfĀ Sdb[hW bdaVg[dWg` bVfTĀ AXUv7`WVef efgĀVsg eVj Vg` WLa__g` SgfĀcg[fdShVdWg` W dĀUve[e]a` ShVg` [hVsg WvLZĪ _ SYVĀVĀVf` S'ees` e[XSF[a` ž>SeaU[ĀfĀ VĀU[VWVWdVg[dWWW . Vd eS'S[dVdVbd_ Vdž

G` WeaU[ĀfĀ Sdb[hW bdaVg[dWg` bVfTĀ AXUv7`WVef efgĀVsg eVj Vg` WLa__g` SgfĀcg[fdShVdWg` W dĀUve[e]a` ShVg` fSgj WvLZĪ _ SYVĀVĀVf` fSgj V[XSF[a` Wv . ž>SeaU[ĀfĀ VĀU[VWVWdVg[dWWW . Vd eS'S[dVdVbd_ Vdž

6S` e`VdWvj USe[[^k Sg` WTS[eWVW . Vg bagha[dV SLZSf dĀVž6S` e`WdVb` V USe[Vd . V SgY_ WfSf[a` Wd eS'S[dVd [[f[Sgj` WLa_ bWdVf bSe`S bVdVdĀVWVWdVWgeVgWsgj . V[XSF[a` ž4[W cgWUveWvj efgSf[a` eea[VfĀcg[hS`WfVd W fVd_ VdĀVd`S`XSĀa` Va` fVWve ea` f bĀeVfĀVd`adVfWS_ S [ĀdWā` f Vd [fVd[W Āe`gVWf`Sff[fgWVWVSeU[ĀfĀ, . Wd bSdf[U]bS` fea` f bVdAg`SbdV [ĀdVefrgSf[a` La__W [`gefW ag | fdĀe[`gefW S'adcgWVdVW Wf . a` V[f `S_ Ā_ WUZaeWVWV`Wvj [Ā_ WefrgSf[a` žG` WbVdVWĀLZWWS` e`MbdV [Vd USe/g` W V[[gf[a` Wdes'S[dVdVd`La_ bSdĀW`g` YS[bVdAg`VS` e`WdVb` V/g` VsgY_ WfSf[a` Wdes'S[dVd _ Ā_ Wd` Wdes'S[dVdĀVWV` Wbagha[dV SLZSf a` fV[[gĀž

6VfVdLa_ badfWV WfeeVdVdchghWfVS` eVW a_ TdVgj SgfdVdVa_ S' Vdž = SZ` W_ S WfFhVd] k eVea` f bWUZĀe egd`S cgVef[a` W adYS [eS` f g` Wj/bĀd[VUWShW bSdf[U]bS` fe WfVd] k W = SZ` W_ S --SZ` W_ S WfFhVd] k Q- `S_ a[[fĀ V WfdWvj /@/ fVgf bĀeVfĀVd` Vd[fgSf[a` cg[[b[cgSf[g` WcgVef[a` Wdes`fĀ- ^SgfdV_ a[[fĀ/@/ fVesSf[XSjW`g` Vd[fgSf[a` eV T`ST`W _ S[ebdĀeVfĀW[XĀdV_ Wfž7` ha[U]`WĀfS[^,

___ ĉb[VĀ_ [VSe[Sf[cgW, bdaT`Ā_ W#/#` \$fi

9 Ya d'Y

:_ SY[W cgWVbSkeJ eWdĀbSdW`g` WĀb[VĀ_ [VSe[Sf[cgWdSdWcg[bagdbSf[fgVd bVdeā` Vdž6Vgj bdaYdS_ VdS`fVd Sf]eā` f ĀfĀ bdaaeĀebagdLa_ TSffdWS_ S`SV[VdEgbbaeW cgWVdVd Sf[a` eU[WfVž XcgVd bĀU[eVdWdLa` eĀcgWUveWd bdaYdS_ Vdeā` f Vd eg[hS`fVd,

E[`MbdYdS_ W3 VefSVabfĀ bVdeā` VdeVdā` f eSghĀVd-

E[`MbdYdS_ W4 VefSVabfĀ [^k S ! WUZS` UAcgWVd bVdeā` Vdeā[Wf eSghĀVd V ! WV LZS` UAcgWbVdeā` W Wēa[f eSghĀž

CgWbdaYdS_ WUZa[e[d[Wžhage1

5VfVWVdU]b[af[a` _ VjW hS`Vgd`^aUjgdWUWg` ĀhĀ W Wf` ĀYSf[X/ bVdeā` Vd bVdjhVf VĀUWVdž3`adĀ` Vd [V[h[Vge bĀdVdWf`S`fVd Sf[hWcg[eV T`WVS b`geabf [eVWVcg[bdaaeV`S`YgĀd[eā` UvVfS[WWW bVdeā` Vd b`grf f cgW`S`fVd Sf[hWcg[eV T`Wb`ged[ecgĀVbg[ecgWS bdaTST[fĀf VdesSghVd fagf`W_ a` WvWf VW! t_ S[ecg [^k S` LZS` UAcgWd egd` cgWfagf`W_ a` WV _ VgdVž3[e] . Wd bSdf[U]bS` fe bĀdVdWf`MbdYdS_ W3 S'adcgWVdVW Wf . LZa[eVef`W` MbdYdS_ W4ž5a_ VsfVWVg[`S_ S'adfĀ Wd [V[h[Vgeā` f g` La_ badfWV Wf ShVdVdSg d[ecgW T[W cgWVW a_ TdWbĀdĀ Wv[h[Vd eSghĀVd eā[f [VWf[cgWbagd`VdWvj bdaYdS_ Vdž



=SZ` W_ S` V F H v e] k bae W f` S c g v e f` a` e g [h S` f M S g j b S d f [U] b S` f e d v e f S` f e ,

____ c b [V A_ [M S e f S f [c g W, b d a T` A_ W S / @ / # ` ' f i _____

9 Ya d`Y

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;_ SY[ W cg W Mb S ke K e Mb d A b S d W g` W A b [V A_ [ M S e f S f [c g W S d W / c g [ b a g d S f f g v d b v d e a ` ` V e z 6 V d j
b d a Y c S_ _ V e S` f v d S f [X e a` f A f A b d a b a e A e b a g d L a_ T S f f d W S_ S` S V [V e g b b a e W c g W W e V e f` _ S f [a` e d [W f [Z
X c g v e b d A U [e V e V e L a` e A c g W U v e V e b d a Y c S_ _ V e e a` f` V e e g [h S` f v e ,

E [ ` M b d a Y c S_ _ W 5 V e f S v a b f A` b v d e a ` ` V e _ a g d d a` f -
E [ ` M b d a Y c S_ _ W 6 V e f S v a b f A [ ` k S !` V W L Z S U W c g V b v d e a ` ` W W_ V d j d W W f !` V W L Z S U W c g W
b v d e a ` ` V e _ V d j d W f z

C g W b d a Y c S_ _ W L Z a [e d [W Z h a g e 1

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> M b d a Y c S_ _ W 5 V e f` W_ A_ W c g W W B W f v d_ V e V W h [V e S g h A V e a g W W a_ T d v e W h [U f_ V e V W` W
b d a Y c S_ _ W 6 V e f [W W f [c g W S g b d a Y c S_ _ W 4 W f v d_ V e V M b d a T S T [f f A e z 7` X S [f i` V e c g S f d M b d a Z
Y c S_ _ V e e a` f A e S g j W f v d_ V e V W a_ T d v e W b A d A V W h [V e S g h A V e z @ A S` _ a [e` V e b S d f [U] b S` f e
L a` X b a` f A e` U W W v d j [A_ W b d a T` A_ W a` f d A S Y [V X A d W_ W f , e v j e` . a` f L Z a [e] ` M b d a Y c S_ _ W 5
W` . a` f L Z a [e] ` M b d a Y c S_ _ W 6 z 5` S [d v_ W f i U W [h [a` W S f Z A a d [W W W` g f [f f A` V e b A d A V c g [b d A V [f
c g g` S W W f S h v e v e S g d [e c g W L Z a [e d S f [V e b d a Y c S_ _ W 3 W 5 + V e g` S_ S f v d j d W d [e c g W L Z a [e d S f [V e
b d a Y c S_ _ W 4 W 6 z 7` b d [U] b W` V e b d A d W U v e W f d v S` f v d S f [h v e` W W h d S [W f b S e A f d W e W e T` V e
S g L a` f v j / f v W W` V W h d S [W f` W A b W v d v c g W W e V [X A d W U v e b v d f` W f v e W f d v S` f v d S f [h v e / W a` V f i
W` a` b S e W W S_ S` [A d W a` f W V e e a` f b d A e W f A v e / S` X a d_ V e z 5 V e f U W c g W a` ` a_ _ W W b d [U] b W
V [h S d [S U W c g [e W f d a g h W W S` e U W V j W_ b` W L a_ _ W W S` e W W a_ T d v d j` S g f d v e` _ [e W A L Z V e z

____ > W b d [U] b W [` h S d [S` U W _____

8 A b [h c b

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7` Y A` A c S t` M b d [ U] b W [ ` h S d [ S U W e W a d A d S g X S f c g W / V S` e W v j e f g S f [a` e e [ ` S i d v e W f v d_ V e
V v e b A d S U W_ S f Z A_ S f [c g W f i a` L a` e V A d v c g W a f d M L a_ b a d f W W f` W W a [ f b S e L Z S` Y v d_ _ A_ W e [ b S d
V j W_ b v e V e L a` f v j / f v e a` f V A U d f e V [ X A d W_ W f / Y S [ e h e b v d v e z A` b S d W W W h [ a` S f [ a` t V A L Z W W W
^ [ h S d [ S U W a d e c g W a b b a e f f [ a` ` S f Z A a d [ W a` | h S d [ W ! | L Z S` Y W` a f d W L Z a [ j z

```

5 V W W_ k e f A d [v j e W [X A d W U W W f` d A b S` V g W W f e W v d f d a g h W S` e W W a_ T d v d j` L a` f v j / f v e z 5 a_ _ W
= S Z` W_ S` V F H v e] k ` a` f a T e v d A

```

> A L Z W W W [ ` h S d [ S U W e f` S` X a [ e S` L a` V i f` S d M W W f d A b S` V g z` V e f S g e e [ L a g d S` f L Z W` V e b S d f [U] b S` f e A v c g A e
c g W L Z W` V e b` g e` S E e V i f` W [ e b S e S f b S e_ A_ W c g S` V` V e_ A_ V e b S d f [U] b S` f e d P a` W W f S g j` W v j` c g W e f [ a` e
W c g W e g v e` _ [ g r v e F k b [ c g W W f i` V e b S d f [U] b S` f e L a` X b a` f A e` N y d e d P a` e v e L a` X [ U f g W W e a` f b v d v W v e z
? A_ W S b A e d W W f g d W W e b d a T` A_ W e [ e b d A d W f f a g y a g e d e W v d S h v e v e S g d [ e c g W S h W` S h v e f a` S X [ L Z S` f` V e
h [V e S g h A V e - [ e d M Z V L Z W W f` M d [ e c g W W S` e` S h v e f a` h S` a d [ e S` f` V e h [ V e b v d v g v e - W [ e e a g Z S [ f W f a T A d`
^ [ ` h S d [ S U W f v a` ` W W e d P a` e d v j S U V e V S` e` V e W v j` h v e f a` e z

```

B S d` S e g [f W` a g e S` a` e h a [d g` V j W_ b` W c g [` W f a g L Z W b S e` S` h [V Z g_ S` W U S d b S d v d W W f S g j
W W_ a d S` f f A b v j f S h a [d W e L a` e A c g W U v e A f Z [c g v e W` V e b S d f [U] b S` f e b a g d S [W f A f d M d A f [U W f e`
b d W v d W W e V A U [e a` e L a` U v d` S` f` S_ a d f U W f S` W W S g f d v e A f d v e Z g_ S` e z

____ 6 A U [e a` e e [_ g` f S` A V e / @ / # ` " f i _____

9 Ya d`Y

```

;_ SY[ W cg W h a g e X S f i v e X S U W S g j` W d j` V A U [ e a` e e [ _ g` f S` A V e e g [h S` f v e z 6 S t a d M V j S_ [ W` V e W v j
V A U [ e a` e v W W e g [ f W` V [ c g W h a f d M a b f [ a` b d A d A V z

6 A U [ e a` / [ f i , L Z a [ e d W f d W ,
A b f [ a` 3` G` Y S [ U W f S [` W W
A b f [ a` 4` . V W L Z S U W W W S Y` v d` V W` . V W L Z S U W W W W d [ W Y S Y` v e z

6 A U [ e a` / [ f i , L Z a [ e d W f d W ,
A b f [ a` 5` G` V b v d f W U W f S [` W W W
A b f [ a` 6` . V W L Z S U W W b v d v d W` V W` . V W L Z S U W W W W d [ W b v d v d W

```

B a g d` S V A U [e a` / [f i` S_ S` a d [f A` . f i W e [V [h V g e a` f L Z a [e ` a b f [a` 3` W` . a` f L Z a [e ` a b f [a`
4` L a_ _ W b d A h g b S d` S` f Z A a d [W W S h v e f a` S g d [e c g W v e z @ A S` _ a [e` b a g d` S V A U [e a` / [f i` . V e z

bSdf[U]bS fea` fUZa[e] ^abf[a` 6 WfVgHwVfÄrdVcGStXÄeVS_ SfvjgdeVWd[ecgWS`adecgWVWj`Wf
. a` fUZa[e]g` VbVdVUUVfS` WWWS_ Ä_ WHSVgdVbÄÄWabf[a` 5 fZBg[ecgWVÄ_ Ä_ VÄcgvWf[a` e
a` fÄfÄbaeÄVÄ` fage VÄbSdf[U]bS fed` ageeSha` eÄYS`Wf Wf cgW . VÄbSdf[U]bS fea` fUZa[e]
VÄabf[a` e3 Wf6 WfVgW`Wf . a` fUZa[e] VÄabf[a` e4 Wf5z5VUa_ badfW` Wf Ua` fdW[f VÄ
dÄg`fSfe SffWVge bSd`S fZÄad[WWW`gf[fÄ VÄbÄÄW`eVÄ` `ScgWVWVÄ`SYWfe ShVÄVÄ`Sg d[ecgW
UZa[e]dS[Wf VÄabf[a` e3 Wf5 WfVÄSYWfeS_ SfvjgdeVWd[ecgWUZa[e]dS[Wf VÄabf[a` e4 Wf6z>VÄ
. VÄbSdf[U]bS fedVÄS` feÄfS[Wf b`geLaZÄdWfe, [eÄfS[Wf ea[f ShVÄVÄ`Sg d[ecgWV[e]a` fUZa[e]
VÄabf[a` e3 Wf5 fÄea[fS_ SfvjgdeVWd[ecgWV[e]a` fUZa[e] 4 Wf6 fZ
>SdS[e]` bdf` U]bS`VWVd[ÄdVSVÄU[e]a` /[[fiV` T`VÄrdW

;`hSgf_ [Wj d[ecgWVbVdVdW /VbAgdS[eSge]` Vd[W bVdVdWg fagf[cgWVÄfVÄdVÄdVbVdVdW
/eS` ebagh[dXS[dVgga[cgVUWÄa[f bagdLZS` VÄUWÄÄg`fSfZ

BagdWV a_ TdVg` VÄVgdÄ UUV` bagdS[f eW` T`VdS[e]` `ST`W` ÄS` _ a[` d` eVÄ` `Wbd[U]bWVW
^gf[fÄ VÄbÄÄW`UVfVfSff[fgVW VÄf bSeVg fagf`dSf[a` `WVÄ

<gceg` dÄUW_` WfÄ`S b`gbSdf VÄÄUa` a_ [efVÄ`ShS[Wf VÄdÄeVdVÄegd VÄdÄg`fSfeV Vj/bÄd[WUWÄ
V[d]VÄVÄbSdVÄbekLZa`aYgVÄz7` bSdf[U]g`Vd [eUd[f]cgS[Wf WÄSf]cg [Ä` k`ShSf]bSeWÄ` af[hSf[a` e
bÄUj` [S[dVÄz@ÄS` _ a[` d` VÄ Vj/bÄd[WUWÄ egbb`Ä_ WfS[dVÄ`ShWV`WÄhdS[eW`Wj` /YS[` eVf bVdVÄ
ÄVÄeVÄ` aVÄVÄf[a` f`Ua` X[d_ Ä` VÄ` [LaZÄdWUWÄdÄhÄÄVÄbSd VÄfdShSg` bÄUÄVWfZ

3`add` ea_` VÄz` age[dSf[a` `WÄg`VÄZUWV` aVÄVfZÄad[cgWcg[VÄf VdÄ` Ä1E[VÄ` [LaZÄdWUWÄ
ea` f`fdaghÄVÄ`VS` eWV a_ TdVg` Ua` fVj`fVÄ`V[XÄdWfe Wf cgW`ZkbaFZÄdW [`hSd[S` U` VÄf bSe
ShÄÄW[Ä`k`S bVg`fZÄrdW`SgfdVÄdS[e]` ecg[eWUÄSLZWF`Vd[ÄdWUWÄ_ badfW` Wf Zg_ S[` dÄUgdWfZ
=SZ` W` S` S` V` FhVÄ] k` a` f`Ä` VÄg` W` aghVWVfZÄad[VcG[`S bSeUa_ b`ÄVW` Wf dÄVg`fÄ`S fZÄaZ
d[WWW`gf[fÄ VÄbÄÄW`_ S[ecg[Sbg`Vj/b`[cgVd`^ShVÄ[e]a` `S bVdVWV`SgfdVÄ`S [XÄfSf[a` eWV
Ua_ badfW` WfVÄ`Ärd[cgVÄ`cgS` Vg` WbVÄea` `WÄf`Ua` XÄ` fÄVÄSg`YS[` Wf` `S bVdVÄ`ZHS` fWV
bdÄeW`fVd`b`geW`VÄfS[ÄUVW` aghVWVfZÄad[WVÄd[hÄÄWV`ShVÄ[e]a` `S bVdVÄ` agebÄeW`fa` e
V`SgfdVÄ`S` a_ S[VÄz

ž **YhXchU]cb**

;_ SY[` W` cgWhageÄfVÄ` [h[fÄ`1` bSdf[U]bVd`1` g` Wj/bÄd[WUWfagfWÄ`_ b`W, [efVdU]` c` aTVÄ`cgW
hageShW`1`S`_ S[e]` VÄ` afW` Wbdj` SgcgWhageeVd[V bÄf`1` VÄhWVdVÄ? S[` fWS` f`dWVÄW`1`
UWÄ`U]` c` aTVÄ`eVÄ`_ SY[` W` cgWhageS`W` VÄSLZVÄdV`aUSe[e]a` ž7efZUÄcgWVÄbdj` Sg]`cgVÄ`hage
hag`W` VÄhWVdVÄ` f`b`geÄ`VÄÄd [WVf[cgVÄ`ag`b`geTSe`cgWVÄbdj` Sg]`cgVÄ`hage VÄSLZÄVd[W
V`aUSe[e]a` 17` YÄ`ÄdS`LZSLj` S`fWVS` UW` hS`ad[eVd`eVÄ`bcbdbVÄ`aTVÄ`eVÄ`U` U` VÄgd`Sff[d]TgVd`g`
bdj` egbÄd[Vgd`1` UÄg[SgcgW[Ä`eVÄSf] bÄf`1` VÄSLZVÄVÄz6`VÄ`hSd[Sf[a` eegdUVfVWj/bÄd[WUWÄ`_ b`W
a` fÄfÄVÄVÄfÄVÄ`bSd6`S` [W=SZ` W` S` f`-SU]` =` VÄeLZ`VÄD[LZSd`F`ZS`VÄ`ÄSZ` W` S` WfS`z` Ä

>SfSeeW`USÄ`

9 Ya d'Y

G` WfSeeW`USÄ`SÄfÄ`Va` `ÄW` g` YdagbW`ÄrgV[S` feVÄ[Ä`VgdSÄfÄ`W` S` VÄVWÄ` `Vd`Wbdj` /WfdW`
VÄ` f`SgcgW[Ä`eVÄS[Wf bÄfÄe`1` ShWVdVÄ` S`WV` S` VÄ`1` g` SgfdW`dagbW`ÄrgV[S` feVÄbÄU[eVd
`Wbdj` SgcgW[Ä`eVÄS[Wf bÄfÄe`1` SLZVÄdUVfW`_ Ä` WfSeeW`>Wbdj` _ ÄV[S` WÄW`fWg`bdV` [Vd`YdagbW
VÄrgV[S` feÄfSf]VW` f` S`adecgWVbdj` _ ÄV[S` VÄ` `Ä`bSd`VÄSLZVÄgdeÄfSf]VW` f` ž

5WfkbWVWf[S]eUa` fdW[f VÄbdÄV[Uf[a` e`VWS`fZÄad[WWW`gf[fÄ VÄbÄÄW` W`_ Ä` WÄTVÄ`WÄhdSf
aXX[d`S`_ Ä` Vg[f[fÄ VÄbÄÄW` bSdLÄ` eÄcgWfÄrdÄhS`gÄ`Sg`_ Ä` Vbdj` ž

5VÄfWS` a_ S[VÄ`SbbWVW`VÄVÄ`VÄfSf[a` ž5VÄÄUd[Ä`_ badfS` fVS` e`ÄhS`gSf[a` WV`aTVÄ` WbVg`f
eVj/b`[cgVd[e]`_ b`W` Wf bSdVÄ`bdÄÄdWUWÄ`V[XÄdW`fVÄz` `k`Sg` W[ebSd[fÄ`WfdWS`hS`Vgd`cgW` age
VÄ` `a` e`1` cgVÄ`cgWUZa[e]VcG`W` agebaeÄVÄ` eVÄ` afdVÄhS`gSf[a` Vg`_ Ä` WÄTVÄ``adecg [Ä` W` age
SbbSdf[Wf bSÄzE[`age[_ SY[` a` e` afdW`_ S[e]a` ag` afdVÄSg`fVg[Ä`bdÄÄÄ` VÄVÄ`VÄfSf[a` bagdSf
eVj/b`[cgVd`bSd`SÄVÄf[a` cgW` agedVÄW`fa` ebagd` aeT[WÄz@ÄS` _ a[` d` V`SgfdVÄ`Vj/bÄd[WUWÄ`a` f
ÄfÄ` WÄVÄ`VÄ` f`bdaghÄ`cg [Ä`k`Sg` WÄf[UVW` hWVdWVÄ`T[WÄ`_ Ä` W` aghWV` Wf`SLBg[e]a`Ä`
^SÄVÄ[X` SgdSf]bSeWÄd` W` agVdUa`_` W`bSdVj/W` b`WVÄ`fSeeVÄ`1` USÄ`ÄSZ` W` S` WfS`z` ÄVg

7` UÄWÄ`Ä`SfZÄad[WÄf`g` [hVÄWV` Wf`UÄd`WVW`g` SWf`ShVÄ`VÄ`Sg`d[ecgWÄh[fVÄS` Vd[ecgWV` fagfVÄ`UÄdÄ` eS` UÄ
[VÄbWVS`_` Wf`WfageYS[` eVf bVdVÄz

Λfi;` hve[dvS` eWēat[YSf[a` ežEgd`S` `ÄWUWVēZU` Xagd [da` fg` dWVW` WfcgSeZUWfS` WW
. ž
Λfi;` hve[dvS` eWēat[YSf[a` e_g` [U]bSVēZēgd`S` `ÄWUWVēXagd [da` fg` dWVW` WfVW`
`WV[_ bī fež

_____ HafdWd[LZVWdS` Vža: UW, bdaT`Ä_ W\$ _____

9 Ya d'Y

Hage Äfvē g` Sh[WWVUfVgd WēbSVē X` S` U[Ädvē _ S[e` gēcg` 1` dÄUW` _ Wfi hage Sh[W bVg V SdWf 1`
[hve[dzBg[d hage ShW ZÄdfÄVg` badVWg[`^WWV[cg[VfÄe VVWV[fde WWhafdWdS` Vža: UVzG: WbSdf[W
` a` ž` ÄY[VSf` WWWUbadVWg[`^WVē [hve[WVS` e` SēaUÄfÄ` 1` ZSgf d[ecgW4žHage ZÄefW` 1` S[eēvd` W
badVWg[`^WWVcgWag` 1` WZS` YvdW [hve[ēS` fVS` eV Sgfdēff[de/Vē XS[e WUagdSfSWV` Wē[_ bī fe
ēā` fVÄd[ēa[dVēž

HageShW` WZa[j` WfdW,

Λfi;` hve[dvS` e` SēaUÄfÄ` 1` d[ecgW` aVÄdÄ` 3žEgd`S` `ÄW` ShSVgdWēSUR[a` eS` † LZS` UWW
Uba[gdWW` . † LZS` UWWVdēfVd` eST` WV` † LZS` UWWVdÄYdēvd` WW` . ž
/TFi? S[` fW[d` d[hve[ēeW` WfVS` e` SēaUÄfÄ` 1` ZSgf d[ecgW4žEgd`S` `ÄW` ShSVgdWēSUR[a` eS`
† LZS` UWWVagT` Vd` † LZS` UWWVdēfVd` eST` WV` † LZS` UWWVdÄYdēvd` WW` . ž
Λfi;` hve[dvS` eWēat[YSf[a` ežEgd`S` `ÄWUWVēXagd [da` fg` dWVW` WfcgSeZUWfS` WW` . ž
Λfi;` hve[dvS` eWēat[YSf[a` e_g` [U]bSVēZēgd`S` `ÄWUWVēXagd [da` fg` dWVW` WfVW`
`WV[_ bī fež

3hW` WbdaT`Ä_ W† WēcgSfdW[hve[ēeW` Wfeēā` f` aghVsgj` ,` WdS` Vža: UW hage S` S[eēÄ` WW
^SdWf cgWhage baghW [hve[d` †TdV` Wf bSd_ [WēcgSfdW` fVd` Sf[hVēz` @age SobVWda` e` S
efgSf[a` Vg bdaT`Ä_ W` S` Uba` Ubf[a` ` VgfdW3hW` WbdaT`Ä_ W† WZa[j` /TfVēf` WēfSfg` cgaI` Uvēf
WZa[j` cg[ShSf` ÄfÄ` WUfVgÄ` bSd` hafdWdS` Vža: UWSg` _ a_ Wf aÖ` ^[hve[ēeW` Wf SÄfÄ` Xsfz6S` e
WēVWg[UēS` WēbSdf[U]bS` feēā` f` †TdV` WZa[j` e[dbSd_ [WēcgSfdW` bbf[a` eWY` YdSfg[fV` WffL` S[e
ShW` WbdaT`Ä_ W† a_ TdVg[eā` f` Uvj` cg[_ S[` f[W` Wf` S` fVd` Sf[hWTFi` UVēž` ŽV[dW` SefgSf[a`
SfVgWVW` WēfSfg` cgaž5VU[dVēad` cgS` V` ageUa_ bSca` e` WbagdWVfS` WWbSdf[U]bS` fecg[a` f
LZa[e[` ^abf[a` /TfVS` e` S` Uba` Ubf[a` ` VgfdWg` bdaT`Ä_ W/` . fSg` bagdWVfS` WWbSdf[U]bS` fe
cg[a` f_ S[` fWg` SefgSf[a` 1` ZSgf d[ecgWWS` e` S` Uba` Ubf[a` e` fSfg` cga/` . ž

5VfVWV/bÄd[W` UMS` ÄfÄ` dW` bdaVg[fV` ShW` WēfSfg` cga V[ÄdW` fel` V` SgfdēS` fVd` Sf[hVēV [hve[ēeW` Wf
VfVēLSVdVēS` fVd` Sf[Xe/ha[dV]W` b` WU[ŽVēage` NēS` gWēā` W` L` WU[ZSgeVd` . ž

_____ 5SVdMS` fVd` Sf[X` _____

9 Ya d'Y

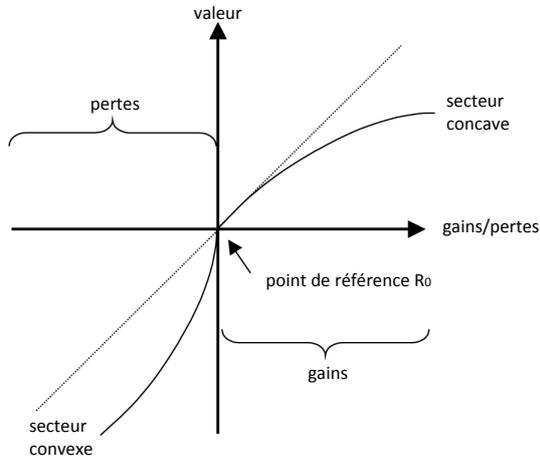
Ž>S5a__ [ēēa` bagd` SÄUgd[fÄ` Dagf[ÄdW@Sf[a` S` Wwa[f` VÄU` WdUa__ WfS` ^agVdēā` TgVWV` WfdW
Wvj` bdaYdS` _ WēWdWZVdZVēgd` SÄUgd[fÄ` [fS` Ä` adSf[a` VWS` eÄUgd[fÄ` WēSgfa` aT[` WēbSdWZaUē
fī` W[WUba` X]YgdSf[a` eVg` dÄeW` ha[dV` VēW` UWUWV` fgde` WēÄUgd[fÄ` fV` [fS` Ä` adSf[a` VWS` eÄUgd[fÄ` Wē
SgfadagfVē/TSd[Ädvē WēÄUgd[fÄ` S` S` [ēēW` Wf` WēLZS` gēēÄVē` ÄLZS` YVgdeV` SgfadagfVē` WV` [eWV` b` SUW
WV[_ [fSf[a` eWWh[fVēWēÄVg[fV` WäUS[ēÄVēž

CgSfdW` VēgdVēēā` f` Uba` e[VÄdÄVē,

Λfi 3` ^agVd` . 1` SÄUgd[fÄ` Sgfa` aT[` WV` . 1` SÄUgd[fÄ` dagf[ÄdW`
/TFi 3` ^agVd` . 1` SÄUgd[fÄ` Sgfa` aT[` WV` . 1` SÄUgd[fÄ` dagf[ÄdW`
Λfi 3` ^agVd` . 1` SÄUgd[fÄ` Sgfa` aT[` WV` . 1` SÄUgd[fÄ` dagf[ÄdW`
Λfi 3` ^agVd` . 1` SÄUgd[fÄ` Sgfa` aT[` WV` . 1` SÄUgd[fÄ` dagf[ÄdW`



6 Wb`gd La__ W age`Sha` ehg VS e`Ve VjWj b`Ve b`dUAWWfet`Ve YWea` f`fWVS UW` ĀrdMS`hVdeVe
 Sg d[ecgVWV UMcg[La` UvV WVeYS[et`_ S[eS_ SfVgdVWd[ecgVWV UMcg[La` UvV WVe b`VdVē>W
 ba[f`VWdĀAdVUWēAbScMVeWvj Va_ S[VeVf SFZĀ_ Sf[cgVW Wf`S`Xa` Uf[a` Vgf[f`fĀ Va[f`ĀrdW
 La` LShWS e`McgScf[Vd bae[f[XVfLa` hVjWWS e`McgScf[Vd` ĀYSf[Xē
 >VWdSbZ[cgW ž` b`ĀeWfVg` WLagdTWfkb[cgWbdabaeĀWbagd`W_ aVĀVē



8 ž` 9dSbZ[cgW` a` f`S` f`g` VLagdTWfkb[cgWbdabaeĀWbSd`S`fZĀd[VWVēbVdēbVf[hVē/TSēĀVēgd`Vēf`dShSgj` VW
 =S` W`S` ` V`FhVē]kfi

>VWdSbZ[cgWLa` f[Wf`fagfVē`VēUSdSfĀd[ef[cgVēcg[SbbScdS[eeWfLa__ V`S` a`_ S[VēVS` e`SfZĀd[V
 VW`gf[f`fĀ VēbĀVē=S` W`S` V`FhVē]k egYĀdWf`cgWVbdUWēgecgWUZSuj` gf[f`eWbagdXS[dW
 VēUZa[j` La` badfVWVgij` ĀfSbVē,

bdV [ĀdV` Wfi a` La` efdg[f` WLa` fVj/fWVg UZa[j` -

bg[ea` bdVVeS`VĀU[eja` eVā` Vēbd[U[bVēWVTSēVēVWSfZĀd[VWVēbVdēbVf[hVē

5 VVfWbdV [ĀdVĀfSbWēSbbWVWVUSvdSYWLaY` [f]Xē>WUSvdSYWVē`ĀfSbWāŌUZSuj` UZa[e]f`ea`
 ba[f`VWdĀAdVUW` bScf[dVgVgW[ĀeVdVdĀeWfVdS`VēS`fVd` Sf[hVēbaee[T`Vē5a__ W age`Sha` e
 hgl`VUSvdSYW` Vēf`bSeēVj`VW` Wf[` XgWUĀ`bSdVWhdS[ebcdT`Ā` Vē`bSdVj`W` b`W` `Sd[UZVēVj`Vē
 bVdVēag`VēYS[` e`ĀVē`ag`VēfSfg`cgaffi`_ S[eSgeē`bSd`S`S` [ĀdM`XUf[hW` Va` f`g` Vē[f`gSf[a`
 Vēf`bdĀeWfĀVē?` aV[XVd`VfSgj` VW` adfS[fĀ`W` fSgj` VVēgch[VWVhdS[f`ĀrdWg` Vē`_ b`WcgVēf[a`
 VVēf`k`V5VdWVVS` fi`S`bVdUWb[f`a`` VWS`bVdēā`` W`_ aV[XWS`_ S` [ĀdVWā` f`MbcdT`Ā` VVēf`USvdĀ
 Vē`bSdLa` eĀcgWf`ea` UZa[j` ž: ST[f`gVWV` Wf`Ādēcg`g` VbVdēā`` Vhā[f`WLa` fVj/fWV` fVd` VēVW
 bVdVēf`fSgj` VW` adfS[fĀfii`VWVS`fWVS` UW` ĀrdMS`_ SfVgdVWd[ecgVWV`UZa[e]f`Āf`S`fVd` Sf[hVd[ecgĀVē
 5VbWVS` fi`cgS` V`WLa` fVj/fWVēf`UWg[`WVVS[` e`fSgj` VVēgch[VVēUZSuj` Vēf`fkb[cgW` Wf`ShVdēVSG
 d[ecgVWV`UZa[e]f`Āf`S`fVd` Sf[hVd`Sb`geēŌdVē

;`Vj[efWj` USeāŌ`VbdUWēgeVWUSvdSYWbVgVf`ĀrdVdĀe[` XgWf`egd`VdĀeg`fSf`WVS`VĀU[eja` ž5`Vēf`
 `Ādēcg[Ā`_ aV[XWVba[f`VWdĀAdVUWV6S` eUWUSd[Ā`SgY`_ WfWV[` XgWUWg`La` fVj/fWV`bVdVēf`Sha[d
 g`WdS`WLa` eĀcgWUWēgd`WĀU[Vg]d5Wg[žU` bVgVf`VhVW`[dea[f`ShVdēVSG`d[ecgVēea[f`S`_ SfVgd
 Vd[ecgVēVā` `S`bae[f[a` VēS`fVd` Sf[hVē`dVsf[hVē`Sg`ba[f`VWdĀAdVUWV



? Ā_ Wē` aebdĀh[e]a` e` Wēa` fbSefafS_W_ WfLadMUFVē` age` VēXS[e]a` eShWUla` X'S UWēa[FYdWUW`
`afdVēSha[dbVUēa` `Wfēa[f bSdUWcgWUWēĀhĀ` W_ Wfē` agea` fXS_ [fVēz;`ēēa` fXSU[Vē` 1_ SY[Vēd
Vē` afdW_S_ [fScfĀbdah[Wfbd` U]bS_W_ WfVWVj/bĀd[WUW, cgWUWēa[FVW_ S_ [ĀdW[dMUFVag
[V[dMUFV` ageSUbVēa` e`Wē[` Xād_ Sf[a` eegd` afdWVfagdSYW` afdW_ [fVg cgW ageaTeVēa` e
W bVēd_ S` WUW@afdWgYW_ WfVē` aeLZa] VĀbWVWf XādVW_ WfVW afdWVh[da` `W_ Wf ag WV
` afdVZ[e]fa[dVē

6Āē` ādēcg[^_ S` cgWVē[` Xād_ Sf[a` eegd` S` XādVcgWUW` g` ĀhĀ` W_ Wf d[ecgĀ` SgfdW_ S_ [ĀdW
VĀ[_ [Vēd` S_ T[YgĒĀW VZadeWVS VĀVgUf[a` VēVWVj/bĀd[WUWbVēa` `WVWVf VVagd [dVē[` Z
Xād_ Sf[a` e` S` cgS` fVēz>Vē` YaghVēd` W_ Wfēd` Vē_ AV[SeVēSgfdVē[` ef[fgr[a` e` Xā` fVWdS` VeVēadfe
bagdĀVg[dWV [hVēg V_S_ T[YgĒĀag` W_ S` cgWVbVēa[e]a` La` Uēd` S` fUēdS[` eĀhĀ` W_ Wfēz

3U[VWfe` gUĀS[dVē

qYa d'Y

;_ SY[W cgWVēbVēa` `Vēh[hS` fVS` e` Wēa[e]` SYW` g` WUWfdS` W` gUĀS[dVēVg[` ^Wf` La` ` SgfdVēbcaZ
TST[fĀV` g` S_U[VWfz?` Ā_ Wē` WVēēa` f[` Xād_ AVēegdUWēVēdVēegd` VēbcaTST[fĀē[` ^Vēf` fag` age
baeē[` Wcg` WVē` SbbāZ` WVWf` bSe` M[ecgWēĀM-` V` StadV` bSdUWcg` WVē_ S` cgWf` WUa` X'S` UWS` e` Vē
bVēa` `Vēcg[` Xāgd` [ēWf` Uē[` Xād_ Sf[a` e-` Vē` ag` Weg[fVbSdUWcg` WVēa` f` g` VbVēUēb[fa` [` UadMUFV
WēbcaTST[fĀēVj/SUfVē

3[` e[Vēhā` eZ` ageSTadVēd` MbdcaT` Ā_ WVWS` La` X'S` UWV` bĀēVfVēa` e` cgWcgVē` Vj/bĀd[WUWē
cg[[` fcaVg[e]Wf` WēT[S[eVS` e` WUS` Uē` ^LadMUF` VēbcaTST[fĀēz` 5Vē` cgVēf[a` e[` XgWf` egd
S_ S_ [ĀdWā` f` VēSYWfe` Xā` f` g` LZa]` Sbbcbcd[Ā` UēfZ[` Z[VdWUWg[` cg[hS` VgdVa` ` Vēd` ^gf[fĀ
VēbĀĀWS` b` gēĀVēĀVē

ž @jBwfhj h XY # rj Yfgjcb , `rūb V][i QĀ

>VēefgSf[a` e` S_ T[YgĒēegdY[ēWf` W` ^STaWUW[` Xād_ Sf[a` e` LadbMUFVē` egd` VēbcaTST[fĀēz` 6S` e
Vē_ aVĀVē` WVS` fZĀad[WWW` g[fĀ VēbĀĀWV` WVS` fZĀad[VWVē` bVēbVUf[hVēd` VēĀLa` a_ [ēVēVē
Vē` bekLZa` āYgVē` egbbaeWf` cgWVWĀU[VVgd]` La` ` Sg` ` VēbcaTST[fĀē` egT` VUf[hVēVē` cg[^bVg[
ĀhS` gVēd` MbdcaT` Ā_ VēSgcgW[` ^XS[fXSUWV` SY[ēS` fV` g` W_ S_ [ĀdMcg[` _ S] [` [ēWg[fĀĀ` ^ShgWVWUē
bcaTST[fĀēz` 3[` e[Uē_ aVĀVē` Wf[W` WfSTēa` g_ Wf` bSe` La_ b` fWVWS` baeē[T[fĀcg [` k` S[f` g` W
ShVēa` ` ^` Uēd[fgWVUēfZ[` Z[VdWg` WShVēa` ` ^` S_ T[YgĒĀfifS` fV` g` ba[fVWhgWVēd[bf[X
cgW` ad_ Sf]z

A` d` ^S_ T[YgĒĀVW[` Xād_ Sf[a` dMS[fhVēg d[ecgW[` S` U[Vd` ag` _ a` ĀfS[dVēbSdVjW_ b` VVS` g` VVW
egd` VēVĀU[e]a` eĀLa` a_ [cgVēz` 5WU[Vēf` ĀYS` W_ WfhdS[` VS` e` WēefgSf[a` e` La` Uēd` S` f` bSdVjW_ b` W
Vēd[ecgVē` fVUz` a` āY[cgVē` egdfagf` cgS` V` W` aghWVē` fVUz` a` āY[Vēēa` f` VĀhVēbbĀVē` VēcgW` age
` Sha` e` SgUj` WUa` ` S[ēS` UēbĀS` ST` Vēgd` ScgWVēa` Vēd` aeUēakS` Uēag` ae[VĀVēz` G` VjW_ b` W
U` See[cgWVēf` UWg[` VēS` fW` VēVēbĀēVēg` _ aT[VWV` WVēgdē` baeē[VēVēVē` Ā` SēVē` egd` S` eS` fĀz
> [` cg[Āf` gVWbgT[` cgVWV` bSd[VWgW` ^Y` adS` UēVēf` SdVW_ Wf` dĀbS` VgWV` _ S_ [VēĀW` bcbabē
WVS` V[Xgēa` V` W` aghWVē` fVUz` a` āY[Vē` bagd` VēcgWVē[` ^` k` S` SgUj` Wj/bĀd[WUWbĀĀVWfVēz` 5W
_ S` cgWVUa` ` S[ēS` Uē` bVg[WYVWVdVēd` S` bVgdVē` W` YĀ` ĀdS` S` b` gbSd` VēbVēa` ` VēbĀĀdWf
La` ` SgfdVēd[ecgVēz

>SbdW_ [ĀdVĀf` gVWVUWUa_ badVW_ Wfē[` LagdS` fSĀfĀVWVf` gĀVbSd` 6S` [W7` ^eTVdY` f` cg[` SegbbaēĀ
cgWVē` SYW` febdĀĀdS[Wf` YagVēd` Vē` āfVēd[Vē` ShWUWē` bcaTST[fĀē` La` ` gVē` b` g[f` cgWVW_ [ēVēd
Vēf[` dSYVē` ShWUWē` dĀeg` fSfe` S_ T[YgēM` ^eTVdY` QEa` ZkbaFZĀēMSĀfĀ` hS[VĀVbSdVW` a_ TdVgēVē
Vj/bĀd[WUWē` VēVēf` dĀhĀĀVfēdS` eĀdST` W` V` SgfdVē` La` fVj` fVēz

6 S [W7` ^eTVdY` Vēf` Sgeē[` La` ` g` bagdSha[dV[XgēĀ` g` WĀf` gVg` fēzēVēbĀf` Wg` BWfSya` W` Vē[` BSb[VēVg` BWfSya` W` f
La` Uēd` S` f` Sba` f[cgWVagVēd` W_ WfS` VVē` cfsfēz` [ēbWVS` f` S` YgVēdWg` H[Āf` @S_ z>SfWfSf[hW` 7` ^eTVdY` V[` Xād_ Vēd
` S` bagSf[a` fVēS[` e[V[` XgWUēd` ^ab[` ja` bgT[` cgVēgd` S` YgVēdWVfĀĀ_ af[hĀVbSdēS` UēakS` UWS` e` S` dĀhĀSf[a` VWS
hĀd[fĀ` US[dW_ Wf` La` Xād_ W` ea` fēhS[` ^egd` S_ T[YgĒĀfz` ^ĀfS[fĀh[WVf` 1` bSd[VēVē` VēUg_ Wfēg` fēzēVēdVēd` cgWVS
h[La` dVĀfS[f[` S_UWē[T` WVē` cgWVW` a_ TdWVWĀUē` SffV` VgeĀfS[f` TVēg` Lēg` b` gēĀVēĀ` cgVēdĀngz` 7` f` 7` ^eTVdY` dVēg[
` WdYz` f>[hVēZaaV` 3i` SdV[` bagdSha[dVd[h[ĀVĀ` S` bSj` Vē` S` hĀd[fĀ` eVēd[ecgVē` VēbĀd[ē` VēVĀVĀ` eS` h[W` [` eb[dVē` Vē
SgfdVē` 1` eg[hVēēa` VjW_ b` Vēz



5a` e[VAdW MbdaT`A_ Weg[hS f ,

>Vegd` Vē

q Ya d`Y

;`k SWVj gd VēWMS f hagd`gd W V`gd W; l LZSLj` WLa` fWS f TagVē>VēTagVēbVghWf ĀfdW ea[f dagVēea[f` a[dVē>gd W La` f[WfVēTagVēdagVēV` a[dVē>gd W; La` f[Wf TagVēdagVēV` TagVē` a[dVē

HagebaghW LZa[e]d`g` WVVēVvj gd VēVS` e VēefgSf[a` eeg[hS fVē/3 ag 4fz3bdĀeSha[dLZa[e]g` W gd Wg` WTagVēf f[dĀWWW` S [ĀdMS`ĀSfa[dWS` e UWWVU W` S LagVgdVWS TagVēĀVd [Vē] hage YS` W ag ž

5Zalj 3žHageWVW LZa[e]d`g` WVVēVvj bS[e,

S Ž` STagVēf f[dĀWWW`gd W l hageYS` W e[VēVēf dagVWV e[VēVēf` a[dVē

S Ž` STagVēf f[dĀWWW`gd W; l hageYS` W e[VēVēf dagVWV e[VēVēf` a[dVē

5Zalj 4žHageWVW LZa[e]d`g` WVVēVvj bS[e,

T Ž` STagVēf f[dĀWWW`gd W l hageYS` W e[VēVēf` a[dVēV e[VēVēf dagVWV

T Ž` STagVēf f[dĀWWW`gd W; l hageYS` W e[VēVēf` a[dVēV e[VēVēf dagVWV

>SeVg VV[XAdWUWVfdW`gd W V`gd W; Vēf UMcgW ageeSha` eVg` a_ TdWWTaVē` a[dVēV` dagVē>ageeSha` ecgW`gd W; La` f[WfVj/SUW` Wf` V_ Ā_ W a_ TdWWTaVē` dagVēV` a[dVēV` 3] e[V` S bdaTST[fĀWVf[dVg` W LagVgd bSof[Lj fĀdVēf VV` ž3g La` fdS[dW` age` Wea__ VēbSe eĀdeWVS V[efdTgf[a` W bdaTST[fĀVēVvj LagVgd eVS` e`gd W ž>S b`gbSof VēbSof[U]bS` fe bĀAdVf bSof[V]ShV`gd W; l _ Ā_ Vē[U MbSof Vēf d[ecgĀ eS bdaTST[fĀWēgUĀeVēf La` ` gVz7` XS[fi ZST[fgWV` Wf Sg fagdVW` VēbSof[U]bS` fe bĀAdVf S` S V T` T` ž5 V V bĀAdV U W Vēf S bVĀVShV[e]a` ` ^S_ T[YgĒĀ, VēbSof[U]bS` fe Āh[fWf` S` afV[V]VāÖ Vē[fĀĀfēea` f Vē_ Ā_ Vē _ S[e Vē bdaTST[fĀēea` f [La` ` gVē ag hSYgVē

>abf[a` eĀdW

Dc]bh VĀ

5VU`_ a` fdMcgW`abf[a` eĀdW Vēf bSe fĀV Sg [hV Sg V M d[ecgV Sēea U]Ā` ^ĀhĀ` V_ Wf l _ S[e b`gfi f` S` La` e[VUWVēbSof[U]bS` fe Vg VVdĀ V d[ecgV W VĀhĀ` V_ Wf ž

>VēbSof[U]bS` feea` f U d[FS]` e WVS bdaTST[fĀWV` , bagd`gd W; ž6S` e VēVvj Use[ē bĀAdVf f[dVg` W TagVēWVWVgd W SgfdV` Wf V[fi [ē bĀAdVf VēĀhĀ` V_ W fe d[ecgĀe | La` ` ge` Sjj | [La` ` ge` ž

>ShV[e]a` ` ^S_ T[YgĒĀ La` fdW[f` S fZĀad[VWV`gf[fĀVēbĀdVēbSof[U]bS` W V`gd W g` La` _ badVē _ Wf | [dSf[a` ` W` žFZĀad[cgV` Wf e]g` bSof[U]bS` f bĀAdVē e U W Sēf` abf[a` S` S l [Vf W dĀS[fĀcg [^Uba[f cgW`gd W; La` f[Wf b`ge VWTaVē` dagVē` cgW`gd W V`cg W VĀeg` fSf VēbĀĀ VV`gd W; ž[Vēf XshadST Vž5 V V V S` fi e]a` ` ž[VV` S` VMSgeē VV LZa[e]d W fdW T V T` S adē e[^Uba[f hds[Wf cgW`gd W; La` f[Wf b`ge VWTaVē` dagVē` cgW`gd W SgfdV[^V W dSf bĀAdV T` T` ž5 V V V S` fi ^ShV[e]a` ` ^S_ T[YgĒĀ dV V` MbSof[U]bS` f fdĀe VĀe[dVj VĀ` [Vē` [Vē` f g V V V 5V U La` _ badVē Wf [dSf[a` ` W` Vēf bSe La` _ bSf T` V ShVU Vē U b k S U Vē eg T V V [hVē Vg La` f W g Vē gd Vēž

Bagd` W V V Vgd [fĀdVēĀ bSd Vē VĀRS[ē] U Mcg[eg[f VĀ` a` fdW Vē [La ZĀdW U Vē cg[bVghWf eW bdaVg[dVē

>Vj bĀd[VUWVĀd f W U Vēf ĀVĀdV` Wf e] _ b[XĀVē@ĀS` _ a] e[`k S TVēglagb V Sdf[U Vē cg[e ag f[W` Wf U W V WĀlagž hV d V V_ Ā_ Vcg S V a` V V S VMSg` bSof[U]bS` fe e[ēea` f [V[XAdW fe Sg dĀeg` fSfz>Vē La` U`ge]a` e V W V Vēf V g V Vēea` f cgS[fSf[hV` Wf Vē_ Ā_ Vē cg W U V Vē cg W age VĀU[hā` e[Už



9l Ya d'Y

>Vgd` Vē, VĀ_ a` efdSf[a` VVē[` LaZĀdWUWē

4[W cgWSV[efd[Tgf[a` WbdaTST[frĀeea[fw XS[f[` La` `gW` ageW Sha` eWēUtakS UWēegTVUf[hVēBSd
 VjW_ bW` agebagha` eegbbaeVd cg [^k Sb^geVWtagVēdagVēcgVWWTtagVē` a[dVēVS e^gd W ,

BdagYWhGd WfDB/ a[dnGd Wfi

S[e[

BdagYWhGd WfD , ž

E[g` yagVgd bVĀdMS OSI` agebagha` eĀhSgVd^gf[frĀWbĀdWUWēa` UZa]j La__ W,
 7G/S fi/ G/ fĀ B/DagYWhGd W;fi G/ fĀ B@a[dnGd W;fD

7G/S fi/ G/ fĀ B/DagYWhGd Wfi G/ fĀ B@a[dnGd Wfi
 G/ fĀ B/DagYWhGd W;fi G/ fĀ / ŽB/DagYWhGd W;fD

G/ fĀ B/DagYWhGd Wfi G/ fĀ / ŽB/DagYWhGd Wffi

5a__ WZST[fgVW` ageegbbaea` eG/ fD G/ fi
 B/DagYWhGd W;fĀ / fŽ G/ fD B/DagYWhGd WfĀ / fŽ G/ fD

5Wcg[_ b^cgWcgW

BdagYWhGd W;fDB/DagYWhGd Wfi

E[W_ Ā_ WagVgd bVĀdMT OTI` S_ Ā_ WbdaUvGdW_ a` fdWcgW

BdagYWhGd W;fi B/DagYWhGd Wfi

5Wcg[Vēf W La` fdSV[Ur[a` ShWIS OS _ b^cgS fcgW

BdagYWhGd W;fDB/DagYWhGd Wfi

6S` eea` Sdf[UW7` eTvdY bĀdWfWSbdVghWWWUWēLa_ badfW_ WfeUagdS feM`eTvdY` Q;` ^VĀX[[f
 Sgeē` ^ShVē[a` ^S_ T[YgĒĀ La__ W] g` WbdVĀdWUWbagd` SebĀU[XUfĀ` Vēeag[Y` W[_ badfS UW
 VW[h[eVd^` Uvdf[fgVWV Wvj; USfĀyadVēbd[U]bSVē,

^g` WLa` Uvdf S f^Vd[ecgW
 ^SgfdWLa` Uvdf S f^S_ T[YgĒĀž

;^eagf[Wf cgW` ShVē[a` Sg d[ecgVWf` ^ShVē[a` ^S_ T[YgĒĀea` f WēLa` Uvdf eV[XĀdWfeVf bVghWf
 S_ Wvdf` V[XĀdWfeUZa]j` VS` e` WbdaUWēgeVWbd[eVWWWĀU[e]a` ž>VjW_ bWēg[hS` f` ageS[VWēS`
 La_ bδVvdWVē[_ b^USf[a` ebaeē[VēVf` XS[dWVēbdĀh[e]a` eegd` ^ShVē[a` ^S_ T[YgĒĀž

3Uf[hfrĀed[ecgĀVē

9l Ya d'Y

Egbbaea` ecg [^k S[f Wvj SUR[hfrĀed[ecgĀVē/3 W4fcg[bVghWf_ Wvdf` g` YS[VW ag
 dVbVUf[hW_ Wfz>VēWvj bdaTST[frĀeea` f[` La` `gVē_ S[e` ageeSha` ecgWb3l` eSha[d` SbdaTST[frĀ
 VaTfW[d VW`SUR[hfrĀ3l` VēfWfdW W` , z3[e[` SbdaTST[frĀ La_ bĀ_ WfS[dW Žb3fV aTfW[d
 Vēf Sgeē[WfdW Wf , z6Wb`gd` ageeSha` ecgWb4l` SbdaTST[frĀ WWSY` Vd VW`SUR[hfrĀ
 4l` Vēf Wvdf` ad/dWWW` ^S_ ž

4[W cgWSbdaTST[frĀ_ akW` WcgWg` Wāg` ^SgfdWUf[hfrĀ` SbbadVēSg` YS[VW ag
 ea[fw VW , t g` WbVēa` ` WShVēW` ^S_ T[YgĒĀ bĀdWUWēa` SUR[hfrĀ 3` ^SUR[hfrĀ 4l` bSdUWcg` WWS
 _ a[` eVWhSdST[frĀž@afW cgWS_ Ā_ WbVēa` ` WbdVĀdWUWēSg` WSGfdWUf[hfrĀ/5fi` 3 ag 4 e[Vē
 La` eĀcgWUWēĀRS[Wf Vē_ Ā_ Vd _ S[ecgWVē bdaTST[frĀēĀRS[Wf VjSURW_ Wf VW , ž

>ScgVēf[a` eg[hS` fVēWbaeWS`ade` SfgdWVW_ Wf , kZSZfZ[^g` W[XĀdWUWēS` e` SbVdUvdf[a` WW
 ^S_ T[YgĒĀ WēbVēVēVēVēYS[` e1Fagf La__ Wbagd` ^Sff[fgVWWSUWēSg d[ecgWUf[hfrĀ` W cgW` ShVē[a` ^S_



^S_ T[YgĒĀea[f ^Sb^gedĀbS VgW[^k SWēV]XĀdWUWēVā` cgWMLa` fV/fVLa` Vg[f^1 WēbVWē
ag^1 WēYS[ebaFWf[Wēz5VbWVS f[^SV[XĀdWUW Vēf bSeSgeē[US[dMcg WVVWēf bagd^Sff[fgVW
XSUMSg d[ecgW, ^ShVēja` ^S_ T[YgĒĀ Vēf dĀbS VgWVS e` VēWVj La` fV/fVē@ĀS_ a[d` age
aTēVhā` ecgWVēSWWfeā` f fWVS UM ĀfdMb^gefa ĀdS fe^1 ^S_ T[YgĒĀcgS V [^k S WēYS[e
baFWf[Wēb^gfi f cgWVēbVWēz5VfVSeK_ ĀfdWVēf b^geLa` eS fVcSg V VēSYWfeēā` fXSUM VW
bV[fVēbdaTST[fFēb^gfi f cg^1 WēYdS Wēz7` XSfi ^S_ bVgdWWSbdaTST[fFĀSg` YdS V [bSuf egd
VēLZa]j XS[feēageS_ T[YgĒĀz>VjW b^Vēg[hS fVĀ_ a` fdWUWS[f VS e` WUSeWbV[fVēbdaTST[fFĀz

____ FaĀdS UM ^S_ T[YgĒĀ _____

q Ya d`Y

5a` e[VĀdW Wvj gd VēLa` fWS f TagVēLZSLj Vēz6S e^gd Wf LZScgWTagVWēf` g_ ĀdafĀWW^1
VēSbdaTST[fFĀWf[dVē [badVēcgW` g_ Āda VēfVa` U f z6S e^gd Wf [^k Sg` a_ TdW` La` g
WVTagVēLZSLj WbadS f` [badVēcgW` g_ ĀdazBSdVjW b^W/Sbdabaf[a` WVTagVē` g_ ĀdafĀVē
bagdS[f hSd[VdWV Ād^1 g` z
Egbbāēā` ecg [^k S[f g` WĀLa` bWēWbagdf[dVē W g_ Āda V g` Wgd Vēz6VcgWVgd WbĀĀdWZhage
f[dVēg WTagVē >gd W ag ^gd W 1EagdW, M[Zad Vē: aYScfZ @

5`S[dW Wf [^ k SSgUj` WS_ T[YgĒĀVS e^gd Wf bg[ecgW ageēSha` ecgWSbdaTST[fFĀWf[dVē W
` g_ Āda Vēf VjSUF Wf f , z3g La` fcs[dMVS e^gd Wf ^SbdaTST[fFĀWVSY` VdVēf [La` gW,
[^k SS_ T[YgĒĀbg[ecgWfagfVē VēbdaTST[fFĀeVWVSY` Vdēā` f Ācg[hSWfVēWV^1 , fē
>VēbSd[UbS feXS[eS` fXSUM WfkbWVbdaTĀ_ Vā` f fWVS UM bĀĀdVē^gd Wf UWcg[La` fdWf
VēdĀeg`fSfebdĀĀWVfedMS[fX^1 g` WShVēja` V[XgeW ^S_ T[YgĒĀz6 SgfdMbSd[Ā` age` afa` ecgW
ē[^MbdaTĀ_ WShS[f ĀfĀ Xad_ gĀ La` _ Wj` WbVWVē bSd[UbS feSgdS[Wf bĀĀĀ^gd WēS e
S_ T[YgĒĀgd Wfē

ž @Āa V][i 0ĀXUbgXYgVēbH M HYG Vēa dUfUVYg

5dS[Y 8aj W 3_ aeFhVē]k a` f VjS_ [Ā ^ShVēja` ^1 ^S_ T[YgĒĀz; ēa` f fdaghĀ cgW`ShVēja`
^1 ^S_ T[YgĒĀ eW_S [XĀdWbSd[Ub]ĀdW Wf ^dēcg [^k Sg` WLa` bSdS[eā` ShWVg` ĀhĀ W Wf
` a` zS_ T[YgēW T^ST^Wēaj WfHvē]k @

BSdVjW bV[ēā` fWV S VĀSgj bSd[UbS feVēf [VdWbdj Vg` T[^VWVafVdWVS e` Vj bĀd[WUW
WV^gd W 7^ēTVWz>VēbSd[UbS feWV[S[Wf dĀba` VdMSgj cgVēf[a` eēg[hS fVē ,

____ >afVd[W _____

q Ya d`Y

>W_ a` fS f_ Sj [S^cgWVWēS[ebdĀf^1 bSkVd bagdg` T[^VfSX` Wf[dVēg` WTagVWV^gd W / TagVē
dagVēVē TagVē` a[dVēfVēf ,
>W_ a` fS f_ Sj [S^cgWVWēS[ebdĀf^1 bSkVd bagdg` T[^VfSX` Wf[dVēg` WTagVWV^gd W; /1TagVē
dagVēVē1TagVē` a[dVēfVēf ,

>S_ a[fĀWēbSd[UbS feSVŌdĀba` VdMSgj Wvj cgVēf[a` eW _ Ā_ WfW bežG` cgSd[WēbSd[Ub]z
bS` feā` fVŌdĀba` VdVēVj W Wf^1 ^SbdV [ĀdMcgVēf[a` /WbSd[Ā` a` zS_ T[Ygfi` WcSd[dVēS` f S
ēVj W WfVŌdĀba` VdW ^ScgVēf[a` La` Uvd S f MbSd[hSYgWaŌ VēbdaTST[fFĀēā` f [La` gVēfz
>VēdĀeg`fSfe_ akWēēā` f bĀēWfĀēVS e` WfSTVēg eg[hS f ,

	BSd[US[d` a` zS_ T[Yg	BSd[hSYgWS_ T[Yg
5a_ bSdSf[X	" ž /@/ fi	" ž /@/ fi
@a` La_ bSdSf[X	" ž /@/ fi	" ž /@/ fi

F ž DĀba eĀ° WēdĀ SdāeWbSd[eS_ T[YgeW a` zS_ T[Yge dV T^ST^Wēaj WfHvē]k @

CgS V VēSYWfeĀhSgWf Vēbdj WēT[^VēVēWvj gd Vē/WUSeLa` bSdSf[Xfi ^SV[XĀdWUWVfdW
VēWvj bSd[eVēfdēĀVĀVb^geWV ~fēz5VbWVS f cgS V a` WV S WW UēbVēā` VēVĀhSgVd

@ Vēf W a_ TdWVbSd[UbS fēz



Vf TVsgLagb V ÄfgWw W b[clcgVea` f bcdaghÂ cg [^k Sg` WdWSf[a` bae[f[hWVfdWVw Vwj žG` ZSgf` [hVsg WMLa` X]S UWS e` Vw [e[f]fgf[a` e S Ww La` eÄcgWUw [badfS fVw` ade Ww LZa]j ba [f[clcgVw Sg` [hVsg` Sf[a` S^-V SgfdWbSdf g` WbVdUwbf[a` Vw fca_ bVd[VbVgjf dÄVg[dWVw` [hVsgj V [hVw[eeV Wfz

G` SgfdW[V [fÄwvS f WfdWVw Sff[fgVw bVwv` WwVw V^S_ T[YgÄÄ S ÄfÄ fcdaghÄ bSd 4[Vd VV 5a` W^W ž: ea` fV]S_ [Äg` dUÄ Scl[a` ÄV[LS^S_ T[Yg aD` Vw VÄU[e]a` eVW]S[Vf ÄfDmbd[e]w egd Vw abf[a` eVWfS[fV Wfz7` egbbaeS` f cg [^k S]f Ww V[XÄdWUwVS e` ShVw[e]a` [V[h[VgW^W ^S_ T[YgÄÄ [ea` f dWSDÄ Vw dS[e]a` eVWUwV[XÄdWUw;` ea` f ÄfST`g` W_ VwgdWVwVwv` S[fÄ cg [ebWes[Vf bagha[dUadÄ Vd ShWU` ShVw[e]a` 1` ^S_ T[YgÄÄ W`a` f La` eSfÄ cgWwVwSYWfe` Ww b`ge abf [eVwShS[Vf fWVS` UW dVZVdZVd` ^S_ T[YgÄÄ > V]b [USf[a` `Sb`geel_ b`WVWVWV[XÄdWUw VS e` WLa` badfW Wf Vw cgWVw abf [eVw` ea` f bDÄfe` 1` bSd[Vd VS e` Vw e[fgSf[a` e [UwV[S` Vw UakS` f cgWUWS` Vgd badVwS bcaXf M[Vd W5a` W^` Q

ž @j bZÄfYbW VUÄgYbbY

6S e` Vw LZSb[fdVw bDÄUAWfe` ageSha` eegbbaeÄ cgWcgS` V` Vw bdaTST[fÄe ea` f La` `gVw` Vw SWfe fS[VfWf` ^ [Xad_ Sf[a` cg [e dVw[hWf UadWVW Wf Vw bVghWf bSd La` eÄcgWf bDÄha[d ea` VwVw egd Vw La` eÄcgWUw XgfgdVw? Ä_ WcgS` Vg` bdaT`Ä_ WwVf S_ T[Yg] bagd bD[VdVg` W VÄU[e]a` 1` age Vwv` eegbbaeVd g` W eadVWVW[efdTg]f[a` Ww bdaTST[fÄe/bSd V]V W b`WcgWfage Vw ÄhÄ` W Wfe a` f g` WUZS` UÄÄS` WwVwVw bdaVg[dW` g` Ww[efdTg]f[a` g` [Xad_ Vw CgS` V` age Vwv` e bDÄV[dw] Vw ÄhÄ` W Wfe Xgfgde Sgda` f [Vw]` ageSha` eTVw [WWSbSU[fÄe WWSUg` bagd ÄhS`gVd Vw dÄeg` fSfe XgfgdeZ` CgS` V Wvj` ÄhÄ` W Wfe a` f [VÄbWVS` fe bSd V]V W b`WVw] `S Uwv` La` eÄUg]eVg` VÄ` a` f dgcgÄ` fli` aUg]dWUWg` ÄhÄ` W Wf` [XgVbSeegd` S bdaTST[fÄV W ^SgfdVBSdV]V W b`W Vw bDÄ [Vd` S UwVg VÄ` S W VwVwSe` S bdaTST[fÄV SbbSdf[a` Vg` `a_ TdW bS[d` ade Vg Wvj` [Ä_ W`S Uwv` BSd La` fdWcgS` V Wvj` ÄhÄ` W Wfe` Ww a` f bSe [VÄbWVS` fe` W dÄeg` fSf Ww`g` LZS` YWS bdaTST[fÄV W SgfdV

_____ BdaTST[fÄe La` V[f]a` ` WwVw _____

q Ya d'Y

F [dVd bSdV]V W b`Wes` e` SdV` S UwVg` WLSdfWbAgYwVg` Vg WLSdfVw S W VWS bdaTST[fÄV Wf [dVd g` W SgfdWLSdfWbAgYwVw > Vw Äeg` fSf Vg Wvj` [Ä_ Wf [dSYWÄbVW V WUWg] Vg bDÄ [Vd VS` e UwVSe bSdUwCg [^k S g` WLSdfWw` _ a] eVS e` WwVwž

>Vw ÄhÄ` W Wfe VÄbWVS` fe a` f fÄebSdWw bdaTST[fÄe La` V[f]a` ` WwVw

FS` fVS` e` g[f] fÄVw bÄÄVwCgWbagd` SfZÄd[VwVw bVwVWf[hVd` ageSha` egf [fÄe Ww bdaTST[fÄe bagdLSUg` Vd Vw hS Vgde Vw bÄÄVw ÄhS`gVd Vw g[f] fÄe Vw bÄÄVw dWSf[hVw Sg] V[XÄdW fe LZa] ž@age Sha` eegbbaeÄ cgWwVwSYWfe a` f USbST` Vw V ÄhS`gVd UadWVW Wf Vw bdaTST[fÄe fS` f bagd Ww ÄhÄ` W Wfe VÄbWVS` fecg [VÄbWVS` fe Vw g` eVw SgfdVw V W Vw Vw` agdUw bdaTST[fÄe cgS` V Ww aghVsgj` dÄeg` fSfe Scl[hWf ag LZScgWw] ecg [e dVw[hWf Vw aghWwVw [Xad_ Sf[a` ež5VwVVS` fi cgS` V Wvj` ÄhÄ` W Wfe a` f VÄbWVS` fe ÄhS`gVd Vw bdaTST[fÄe VwVWf g` W S Uf[hfÄ La` b`V]W bagd Vw SYWfe cg [ea` f bVg] ZST[fgÄe` 1` S eSf[ef[clgWw Sg] bdaTST[fÄeZ` BdWVdWVw VÄU[e]a` e TSeÄVw egdVS U]W` Vw [Xad_ Sf[a` e bagd Ww ÄhÄ` W Wfe Xgfgde bVg]f e ShÄdVd La` b`cgÄ` _ Ä_ W VS` eVw USe dWSf[hV Wf e]_ b`Vw > Vw` aVÄVw ÄLa` a_ [cgVw Vw bekLZa` aY[cgVw eegbbaeVf eaghWf cgWwVwSYWfe` W Vw f` 1` agd Vgde UakS` UwVw` Vw bDÄ` U]bVw TSkÄe Ww eZÄ` ` V]b [cgVw VS` e` Vw bSdSdSbZVw eg]hS` fe _ S[eW fVd` Vw e]_ b`Vw UWS e]Y` [XWcg [ebVghWf LSUg` Vd Ww bdaTST[fÄe La` V[f]a` ` WwVw egd` STSeWwVw` aghWwVw [Xad_ Sf[a` e dVgVw ShS` f cgWw` ` WLa` ` S[eW Ww Äeg` fSf Ww ÄhÄ` W Wfz

BdWa` eg` V]V W b`Wg]fÄe VS` eg` W]Vw bÄdWUW[V W La` `gWcg[V]S_ [WSUSbSU[fÄe Ww Zg_ S]` e 1` ÄhS`gVd Vw bdaTST[fÄe V ÄhÄ` W Wfe VÄbWVS` fe Msz` W S` W FhVw] k` Q

5a` e[VÄd` e` ScgVw]f[a` ZkbaZÄf[clgWeg]hS` fW



9 Ya d'Y

Fsj [ehVfeV fsj [eT^Vge

G` fsj [SÄfÄ _ b`cgÄVS eg` SUUWVf ShWVÄVfVWVg[fWVS` g[fz6Vgij WfdVd[eVÄWVfSj [i HÄVfeVf 4`Vgje abÄdWfVVS e`Sh[`WÄA` hageXagd [f`VÄVa` `ÄVÄeg[hS fVÄ,

/Sfi` . WÄfsj [eVS e`Sh[`WÄa` fHÄVfeVf` . äa` f 4`Vgjež

/Tfi G` fÄ_a[` S[WVf[XÄ`WfSj [Lä__ W4`Vgž>S LagdS fVÄÄ`S`XST[`fÄVg fÄ_a[` VS e`VÄ`Ä`VÄ` VÄ` V[fja` ecgWUWVÄ`WVS` g[fWV`SUU[WVfW`S`Lä` U`g`cgWVÄ`_a[` S`LäddWVW`Wf [WVf[XÄ`S` Lag`VgVg fsj [VS e` . WÄLSeVf`SÄUZagÄVS e` . WÄLSež

CgWVWVÄ`S`bdTST[`fÄcgWVWfSj [L` b`cgÄVS e`SUUWVfäa[f 4`Vg b`gfi f cgWVWVÄ`1

>SdÄba` eW`ÄV[S`W`S`cgVÄf`a` VÄf` . f egYÄdS` f cgWVÄ`WVeSUÄdWVf`g` W`_badfS` UÄb`ge YdS` WÄSg`fÄ_a[` SYWVg`fÄ_a[` f b`gfi f cg`Xs [f cgWÄVg`W`Wf`g` bVf[f` bagdWVfSYWVWfSj [e WWS`h[`WVÄf`T`Vg`Vf`cg`S[` efi [`VÄf`_a[` e`bdTST`WcgWVWfSj [Xgf`T`Vgž5`Vb`VVS`fi` . VÄf`S` bdaTST[`fÄcgWVÄ`_a[` S[f`dS[äa` f` VÄb`W`VS`_` W`f`V`SgfdWUZ`aeVÄ`5`W` VÄf`bSe`S`bdTST[`fÄ` cgWVÄ`_a[` S[f`dS[äa` W`f`WS`f`Lä`_`bfWVg`Xs[f`cg`[`k`S`eVg`W`Wf` . WVfSj [eVS` e`Sh[`WÄcg[` äa` f`T`Vgjež>S`bdTST[`fÄ`Lä` V[fja` `WVWÄf`Va` UTV`Sg`Lagb`b`ge`bVf[f`WcgWVS`dÄba` eW`ÄV[S`VÄ` 7` eg[f`W`dW`Sd`Va` e`Lä`_` W`f`LäddWVW`Wf`Äh`S`g`Vd`S`bdTST[`fÄ`e`Sf[ef`cg`W`Wf`z>W`f`W`WfdW` Vgij`ÄhÄ`W`W`feVÄb`WVS`fe`Vf`Vg`de`bdTST[`fÄ`e`Lä` V[fja` `WVWÄf`Va` `Ä`b`Sd`S`a[`WÄ`Sk`VÄž >S`a[`WÄ`Sk`VÄ`V[f`cg`WVWVgij` bdaTST[`fÄ`e`Lä` V[fja` `WVWÄf`äa` f`Ä`VÄ`Vf`cg`W` age`bagha` e`VÄVg[dW`/bdÄ`hÄ`d`f`Sgfd`W`a` `Ä`VÄ` age`Lä` `S[äa` e`g` W`W`fdW`WVÄž

3`S`keä` e`UWS`Äd`_`W`W`W`f`z`Eg`bbaeä` e`cg`W`B`Vf`4` äa` f`W`Vgij`ÄhÄ`W`W`feVÄb`WVS`fe`U`VÄ`Z`Ž`[dW` cg`W`a`L`g`d`W`U`W`g`ÄhÄ`W`W`f`VÄf`fÄ`W`U`V`W`g`Sgfd`W`B`/3`f`W`B`/4`f`äa`fi`d`W`b`W`f`h`W`W`f`f`S` bdaTST[`fÄ`cg`W`ÄhÄ`W`W`f`3`Vf`cg`W`ÄhÄ`W`W`f`4`e`W`b`d`Vg[e`W`f`z>S`bdTST[`fÄ`Lä` V[fja` `WVWVW` 3`e`SUZS`f`4`B`/3`f`f`d`W`b`Ä`e`W`f`WS`bdTST[`fÄ`cg`W`ÄhÄ`W`W`f`3`S`d`h`WÄfS`f`Va` `Ä`cg`W`ÄhÄ`W`W`f` 4`VÄf`VÄ` S`d`h`Ä`ž6`Sgfd`W`b`S`f`f`B`/4`r`3`f`VÄf`S`bdTST[`fÄ`Lä` V[fja` `WVWVW`4`e`SUZS`f`3`ž>S`dÄY`WVW` 4`Sk`VÄ`f`WVÄ`W`Vgij` bdaTST[`fÄ`e`Lä` V[fja` `WVÄ` ,

$$P(A|B) = \frac{P(B|A) \times P(A)}{P(B)} \quad \text{Wf } P(B|A) = \frac{P(A|B) \times P(B)}{P(A)}$$

5a`_`W`f`Va` U`bagha` ež` age`Äh`S`g`Vd`S`bdTST[`fÄ`LäddWVWVWS` e`Vj`W`b`W`Vg`fsj [Va` `Ä`Už` W`ä`ge`1`Fag`f`V`STad`f`[`VÄf`_`_`badfS`f`VW`Lä`_`bd`W`Vd`W`VÄ`[`Äd`_`Sf`[a` e`Xagd`[VÄ` ,

- >S`bdTST[`fÄ`cg`g` fsj [VS` e`Sh[`WÄa`[f`T`Vg`VÄf` , B`/4`Vg`fi` .
- >S`bdTST[`fÄ`cg`WVÄ`_a[` [WVf[X`W`LäddWVW`W`f`g` fsj [4`Vg`VÄf` , B`[WVf[X`Ä`4`Vg`r`4`Vg`fi`
- >S`bdTST[`fÄ`Lä` V[fja` `WVWcg`WVWfSj [äa`[f`4`Vg`f`ÄfS`f`Va` `Ä`cg`WVWfSj [SÄfÄ`[WVf[X`Ä`b`Sd`W` fÄ`_a[` Lä`_`_`W4`Vg`f`VÄf` , B`/4`Vg`f`[WVf[X`Ä`4`Vg`fi`

7`gfi`[eS`f`WfZ`ÄadÄ`_`WVW`4`Sk`VÄ`S`dÄba` e`W`LäddWVWVÄf`S`eg[hS`f`W` ,

$$P(\text{Bleu}|\text{identifieBleu}) = \frac{P(\text{identifieBleu}|\text{Bleu}) \times P(\text{Bleu})}{P(\text{identifieBleu}|\text{Bleu}) \times P(\text{Bleu}) + P(\text{identifieBleu}|\text{Vert}) \times P(\text{Vert})}$$

$$P(\text{Bleu}|\text{identifieBleu}) = \frac{80\% \times 15\%}{80\% \times 15\% + 20\% \times 85\%} = 41\%$$

>SV[XÄd`W`UW`fd`V`S`dÄba` e`W`LäddWVW` . f`W`f`S`dÄba` e`W`ÄV[S`W` . f`W`f`fd`Ä`Ä`V`W`Ä`W`U`W`cg[` egYÄd`W`cg`WVÄ`SYW`fe`W`b`Vg`h`W`f`b`Se`ZST[fg`W`W`W`f`US`Ug`Vd`W`e`bdTST[`fÄ`e`Lä` V[fja` `WVÄ`4`Sk`Äž e`W`VÄ`d`W`Sf[h`W`W`f`e`_`b`VÄ`Bagd`Lä`_`bd`W`Vd`W`Ä`[`U`V`W`W`Ä`Lag`h`V`W`VÄf`[`VÄb`W`VS`f`W`g`Lä`f`Vj`f`W` a`S`W`V`S`VÄ`V`Sgfd`W`b`S`f`[U`b`S`fe`W`V`dÄba`Vd`W`g`V`c`g`VÄf`a` `Ä`YÄd`W`W`f`V[XÄd`W`f`W`S`e`S`cg`W`V`W`S`VÄU`S`d`Sf`[a` /S`fid`_`b`S`U`W`S`VÄU`S`d`Sf`[a` /S`fz`

/S`fi`4`[W`cg`W`VÄ`W`Vgij`W`fd`V`d[e`VÄ`äa`[W`f`1`b`Vg`bdÄ`e`W`Lä`_`W`f`Sj`^`W` . VSUU`W`V`e`W`Vf`Sj [eVS` e`S`h[`WÄa`f`US`g`Ä`e`b`Sd`W`VÄf`fsj [ehVÄf`e`Vf` . WÄa`f`b`Sd`W`VÄf`fsj [e4`Vgjež

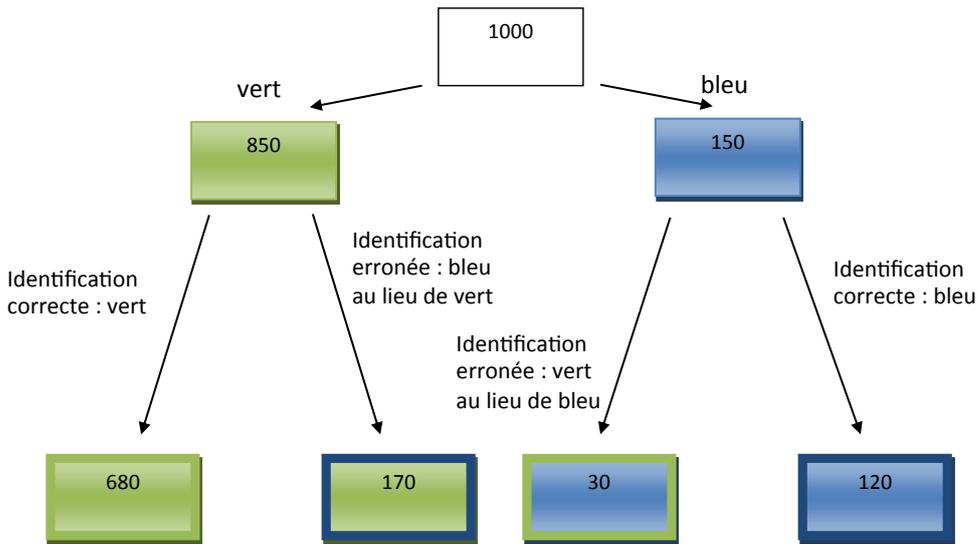
@age`bagha` e`S`geef`VÄVg[dW`cg`W` P(identifieBleu|Vert) = 1 - P(identifieBleu|Bleu) = 100% - 80% = 20% Wf P(Vert) = 1 - P(Bleu) = 100% - 15% = 85%



6S e UWSd 'S d'aba` eW_ AV[S WwV VWh[da` , ž4[W cgWwV SYWfe` gf[teVf fag'agde bSe
 'S a[Ww4SkVd [teLa_bWf_ a[eegd WfA_ a[VfeVLa_ UWfdWf b'geegd W a_ TdVb'geAVW
 VSU[VWfeUSgeAbSdWefSj [eHwVez

9Vd/9 [VWVl VdVVG d[UZ : aXcSYWV f a` fegYYAdAcgW'ha'gf[a` Vef 'SdS[ea` WWSV[X]Ug'fA
 cg a` f VZg_ S[eShVU WUS'Ug^VS e UWfkbWwMbdT'A_ VefSf[ef[cgVd VdVl VdVl : aXcSYW
 Q>VebdTST[frAd ^[XAdVUWefSf[ef[cgWVf VefSYad[fz_ Vefea` f g` W[fdaVgUf[a` dAUWfWS e
 ^Z[efa[dWwWZg_ S [frA/teea` f SbbSdge eVg W V f Sg J H ; ; A_ VefAUWVf fkb[cgW Wf VefAdVd
 Zg_ S[e` Sbcg[AdWf bSeV [Xad_ Sf[a` eW gf[teS` f Uve` af[a` ez>SXSaa` | ` SfgdWwV V SbcgAd
 Wef [Xad_ Sf[a` eVef TSeAVegd ^VybAd[WUWV 'S XAcgWUWcg[Vef gf[teAVbagd_ VfdW` agdVf
 AhS'gVd 'SbdTST[frAVAhA` W_ Wfez? A_ Vef a` Vyb[cgWS a[Ww4SkVd Sgj bSd[U]bS febSdWef
 VybAd[WUWd [^VgdeW T Wfag'agdeV[X]U'WwVdS[ea` ` VdW fVd_ VefWbdTST[frAeV WfcdaghVd 'S
 Ta` ` Vd'aba` eV6S eg` VefAd[W VybAd[WUWd 9 [VWVl VdVl : aXcSYWd` f_ a` fdAcgWbdAeV fVd
 WbdT'A_ Ww fVd_ VefWwAcgWUWSgY_ WfA` W a_ TdWwVbSd[U]bS fecg[bghS[Wf UadVZ
 fW_ Wf b'aha[d 'S d'aba` eV5a_ _ WwUWVhVg Zg_ S[Vef ZST[fgA Sgj XAcgWUWd [^La_ bdVW
 _ [Vg] WbdT'A_ Ww fVd_ VefW a_ TdWwVd[ecgWwVfA_ a[bVgUadVWV_ Wfag [UadVWV_ Wf
 [Wf[X]Vd g` fsj [z

Bagd` ageXS[dWg` W[VAVb'gebAUeW` agebagha` e dVbdAeV fVd ^VjW_ b'WwG fsj [W fVd_ VefWw
 XAcgWUWd ha[d 'S X'YgdW Z UZ WefagefEgbbaa` ecg [k S[f fsj [eVS e'Sh[^W_ ea` fhVdfe
 Vf T VgezeE[` ageWV_ S Va` eSg fA_ a[V [WwV[X]Vd Vef fsj [e [^WwV[X]VdS UadVWV_ Wf
 Wef fsj [eHwVefVf Vef dVefS feVda` f [WwV[X]AeLa_ _ W4 Vge/bSdUWcg [^ SdS[ea` cgW
 , Vg fW befzBg[e bSd_ [Vef fsj [eT Vge [^W [WwV[X]VdS UadVWV_ Wf Ua_ _ WfS f 4 Vge
 Vf Vef dVefS feLa_ _ WfS f HwVefz3[e[WfA_ a[[WwV[X]VdS [f g` faS^Ww fsj [eHwVefVf
 4 Vgeze



8 ž 3bb[USf[a` Vg fZAdA_ Ww4SkVd Sg US'Ug^WbdTST[frAeLa` V[f[a` ` WwV

E[` agehag'a` eAhS'gVdLa_ T[W WwV[e WfA_ a[[WwV[X]UadVWV_ Wf g` fsj [4 Vg] cgS V [^Vef
 4 Vg] ` ageWwVd` eeSha[d W a_ TdWwVSeAO WfSj [Vef 4 Vg Vef Vef UadVWV_ Wf [WwV[X]AeLa_ _ W
 fWV_ fii Vef W a_ TdWwVd[eAO [^Vef [WwV[X]AeLa_ _ W4 Vg] T[W cg'fS` f HwVf / f z3gfdW_ Wf
 V[f] ` ageSha` eTVda [WwLa_ bVd fagVd Vef Xa[ecgWwVfA_ a[S1` fad' ag` dS[ea` t [WwV[X]AeLa_ g`
 fsj [4 Vg] / t fVf fagVd Vef Xa[eaO [^ShS[f dS[ea` / f z3[e['SbdTST[frAeLa` V[f[a` ` WwVef
 e[b'W_ Wf ,

$$P(\text{Bleu}|\text{identifieBleu}) = \frac{\text{Bleu \& identifieBleu}}{\text{Vert \& identifieBleu} + \text{Bleu \& identifieBleu}} =$$



° egdMfL Wl'S V[efdTgrfa` WbdTST[frã Vg` WãcgWUULgchVBSdUNcgW ageW SYÄch` eLh_ T[W [^Wf
bdTSTWcg` _ SghS[eS` SkafWf` S` U[Wlbdh` a` ÄS` fcb[e bÄh[e]a` eÄVcb_ bVbagdSg_ a]` e`g` VW/WfdV
WVW` ageW SYÄch` e`ShdS[äV` T`S` UNcg` S` SkafWf` Ta` e]`[^S` d[ä` fcb[e]X[eWeg[FWVST[@



Gnóth Ág

>Wd[ecgVWV ^[Uvd[fgVWea` f Vw`hSd[ST Vw` _ badfS` fVw` Vw` VÁU[e]a` e cgW` age bdW`a` e VS` e`
`afdWh[Wcgaf[V[W` Vw`>Wh[ca` `W` Wf VS` e` Vw`gW` age h[ha` e Vw` b`gf f [VÁVd` _ Á Vw` ae
VÁU[e]a` eea` f [XgWUÁVw`bSd` afdWbVdUw`f[a` Vg d[ecgVWV` afdWVVS` UW` SY[dVWSÁa` eCdMág
d[ecgÁVw`6 S` eUW`aLg` Wf` ageSha` eVÁUd[f V` _ badfS` fedÁeg`fSfeZÁad[cgVw`ÁUa` a` _ [cgVw`VWS
bd[eVWVÁU[e]a` W` e[fgSf[a` V [Uvd[fgVWw`@ageSha` eUSfÁYad[eÁ Vw` [V[h[VgeW` fda[eYdagbVw`
Vw` age` ageea` _ Vw`La` UW`fÁegd Vw`V[XÁdWUw`W`fdWUWj` cg[ea` f S` Sfvjg`eag` ShVdVw`Sg
d[ecgVWS` e`Mtgf Vw` [Vj]` La` _ bdW`VdWVjg`eLa` _ badfW` W`feV[XÁdW`feXSUM` g` _ Á` WbdaT`Á` Vw`
G` WfZÁad[WYÁ` ÁdS`Mbv` Vw`VWU`SeeVd`g` W`babg`Sf[a` bSd`dSbbad` f` ea` Sff[fgVWVSUM`Sg d[ecgVW
VWLa` _ bdW`VdWVw` VÁVd` [S` feVg` [hVsg` V`ShVd[e]a` Sg d[ecgVWLa` _ W`>Y`Mág` Mv[VVw`Vw`
bdÁha[d`bSdVj`W` b`Vw`V[XÁdW`fÁV`g` W`ba`f[fgW`aghVd` W` W`fS`Vw`4[W` cg [^ea[f` _ badfS` fV`Sha[d
g` _ aVÁWfZÁad[cgWYÁ` ÁdS`cg[bVjg` bdÁha[d` WLa` _ badfW` W`f Vw`[hVw`fkbVw`V` SYW`f`d`bSd`Á[e
Vw`bdÁh[e]a` eea` f T[S[eÁVw`bSd`Ww`ZkbaFZÁeVw`cg[ea` f` fcb`efd[Uw` ag`bSd` VWS[f`cgWUZSLj` bVjg`
UZS` Vw`ea` La` _ badfW` W`f eVw` ` WLa` fVj`fVWS` e` Vw`gW`[eVw`fcdaghVw`

6 S` eg` WbdV` [ÁdVÁfSbVw`g` _ aVÁWYÁ` ÁdS`SÁfÁbdÁeW`fÁSg`UZSb[fdW`Z6 S` e`VWZSb[fdW` Vw` aVÁW
eS` VSdV` Vw` dM[e]fÁ` bdWS` f`W` La` _ b`fVWw`bdVghVw`W` b[d[cgVw`Vw`Vj`bÁd` _ W`fS`Vw`>Vw`Sff[fgVw`
[V[h[VgVw`Vw`XSUM`Sg d[ecgVUZS` W`f eVw` ` cgWw`e`bVw`ea` ` Vw`Xa` f`XSUM` g` WbVdVw`g` g` YS[`z7`
YÁ` ÁdS`Á`ShVd[e]a` ` S`bVdVw`Vw`Vw`VafSf[a` W` W`fSf`g`cga`ea` f`Vw`T[S]ecg[Xad` W`f`Vw`fda[eXSUM`Vw`
Vg` _ Á` WbdaT`Á` W` Vw`ÁfVd`Zg` S[ea` f`fVWS` UW` Áh[fVd` Wd[ecgVWS`ádecg [e`bagdS[W`f`aTfW`[d
g` YS[-V`SgfdVbSd`f`cg` S` Vw`e`bVdVw`e`bagdS[W`f`eghW`[d` Vjg`e`Suf[a` eea` f`b`g`e`d[ecgÁVw`5 WU` Vw`
La` f`dSV[Ufa[dVShVw` Vw`bdÁh[e]a` eVg` _ aVÁWU`See[cgVw`6 Wb`g`el` UWLa` _ badfW` W`f eVw`fcdaghWWS` e
Vw`La` fVj`fVw`V[XÁdW`fe`VWS`h[Wcgaf[V[W` Wág` ádeVÁhÁ` W` W`fe`badSV[cgVw`Vw`VS` e`fagfVw`
Vw`USfÁYad[Vw`VWS`babg`Sf[a` z5Vw`La` U`ge]a` ea` f`La` Vg[f` b`dabaeVd`g` SgfdV` aVÁWfZÁad[cgW
YÁ` ÁdS`La` ` g`eage`W` a` Vw`fZÁad[VWw`e`bVdVw`f`hVw`

3bdÁe` afdWbdÁeW`fSf[a` VwUw`Ww`j` b[fVw`e`VWS` _ aVÁ`feSf[a` fZÁad[cgVW` eU[WUw`ÁUa` a` _ [cgVw`
VWZSb[fdW` SÁfÁ`La` eSUbÁ` `SVÁ` a` efdSf[a` Vj`bÁd` _ W`fS`VWw`e` ^[fVw`Vw`ÁfVd`Zg` S[eVS` e
`ÁhS`g`Sf[a` Vw`bdaTST[fÁeVw`Vw`e`bd[e]e`VWVÁU[e]a` eW` e[fgSf[a` V [Uvd[fgVWw`>Vw`bVdUw`f[a` e
Vg d[ecgVWV` ÁhS`g`Sf[a` Vw`bdaTST[fÁe`ea` f` _ badfS` fVw` ` a` eVj`W` W`f`bagd` ^[V[h[Vg`eVg`cg[
Va[f`gYVd`g` W`e[fgSf[a` d[ecgÁVw`Vw`ÁhS`g`Vd`cgVw`VWSUf[a` bdW`VdW` _ S[fe`Sgeef` bagd` Vw`VÁU[Vjg`e
cg[Va[hW`f`efdSfÁY[cgW` W`f`bdÁha[d` Vw`[USU]fÁV`g` W`ba`f[fgW`V`S` _ S` [ÁdW`a` f`Vw`W`a[f`ÁfVd`
bdÁeW`fÁV`Sg`j` U[fakW`e`z`

BagdLa` U`gdV`UW`aLg` W`f` S`b`Se`bagd`Tgf`V`ÁfVd`Mg` Vw`VdU`b[bf[a` Vj`ZSgef[hW`g`eg`Vw`VWS`bd[eW`
VWVÁU[e]a` eXSUM`Sg d[ecgWág` g` ^[Uvd[fgVW`eS`haUSf[a` Vw`f`VW`a` ` Vd`g` S`bVd`Ag` Vw`cgVw`e`gVw`
ÁÁ` W`fe` _ badfS` fe`Vw`eU[WUw`ÁUa` a` _ [cgVw`Vw`VWS`bekUZa`áY[Wcg[ea` f` fÁe`Sg` d[ecgVWV`
^ [Uvd[fgVWw`



6]V]c[fUd\]Y

4[Vd Hž? žV5a` W4ž>ž/ fž 3_ T[Yg[fk eWY[Y [_g f[žSffqTgfWwU[e]a` e, 7WwUfeaXabf[_e_ S V
VteSYW6S [Yž <gd S^aX4VZSh[acS^6 W[e]a` ? S] [ž / fi, ž , ž ! TV_ž ž

5ZWI? ž=ž >S] ež_ [ScSkS S I Hž WES fae >ž/ fž FZWVta'gf[a` aXagdbdWwUWUe, Vd[VWUWka_
USbgUZ[ž_a`] Vk fdSV[Y TVZSh[acž 5ai WAg` Vsf[a` XadWsdLZ[Vba` [LbV[e]ge[a` bSbWž ž

5ZWI? ž=ž >S] ež_ [ScSkS S I Hž WES fae >žDž/ fž : ai TSe[U SdWTVZSh[acS^T[SeV1 7h[VWUW
Xka_ USbgUZ[ž_a`] Vk fdSV[Y TVZSh[acž <gd S^aXBa'ff[LS^7Lb` a_kl / fi, ž 6[eba` [TW yttf K@r`
@SS?r.év.t, e? t)r?ur@vt`]:C]vzty?tye@r.fv.t@W@r)p[aVAG?fuž

5adLad 3ž BS` Wtg[I 8ž W4agdVd[ež9 [ca` WVEž/ fž: efdgef S_ S_ T[YgagedfZVdFZS` Sd[e] k WU[e]a` 1
7Lb` a_ [Lb4g^Wf` / fi, ž 6[eba` [TW yttf K@r`?r.tyz%>, %tvt?wau, tt@A@DeF@DeaUWžtpi.:tpt
r@r-szx, `tputztz, e?fuž

6aZ_ WIFž 8S] I 3ž: gX_ S I 6ž Eg` WVGž ELZgbbi ž VFI S' Vd 9ž9ž/ fž: V[h[VgS^d[e] Sff[fgVWž,
? VsegVd_ Wfi WwUd_ [S fe] S V TVZSh[acS^Lb` eVtgWUWž <gd S^aXfZWgcbWž 7Lb` a_ [U3eal[S]f[a` I
/ fi, ž , ž ! ž ž ž ž ž ž

7U] W5ž5žVFI [éa` I Dž=ž/ fž: efdgef Sd[e] k WU[e]a` 1 <gd S^aX7Lb` a_ [U4VZSh[acS` VA dS` [I S]f[a` I
/ fi, ž , ž ! žWž ž ž ž

7[Zad I: žW: aYSdFZIDž/ fž 6WU[e]a` _S] [Yg` WwU_ S_ T[Yg[fkž FZWagd S^aX4gef Wž / fi, E E ž

7^eTWd 6ž/ fž D[e] I S_ T[Yg[fk I S V fZVESHSMVj [a_ ež FZVNCgSdWk <gd S^aX7Lb` a_ [Lž / fi, ž
6[eba` [TW yttf K@SS?(t, .2, .x@tr)s)v@I EDEž

8aj I 5žDžW FhVd[e] kl 3ž/ fž 3_ T[Yg[fk ShVd[e]a` S V La_ bSdS[hWY` acS` Wv FZVNCgSdWk <gd S^aX
7Lb` a_ [Lž / fi, ž , ž ! ž

8d[W_ S I 4ž/ fž 5a` eg_ VdVba` eVfa [UVf[hVg` WdS'fVd SF[hVZVžFZ [egdS` UvbcaYdS` ež: cg[dk
/ fi, ž

8d[W_ S I 6žW Eg` Wd Ež/ fž 7j bWU_ WfS^? VZaVe, 3 Bc[WdXad7Lb` a_ [ež 5S_ Td[VWVG` [hVd[e]fk BdWž
, ž I bSVWž

8d[WV I: žV 4g_ W? ž7ž/ fž FZWVW_ S V Xad[e] k SeeVž FZVb_ W[US` 7Lb` a_ [UDVWVW / fi, ž
6[eba` [TW yttf K@r.f?]tv?rt?`]@r.fv.tUS@Vzv@S`~vp9RQpF: ?fuž

9[VdWV I Vd 9žV: aXcSYWVGž/ fž: ai fa [bcahWTSkVd[S` dVSe` [Yi [fZagf [efdgUf[a` , 8dVgWUk
Xad_ Sfež BkLZaž[LS^DVWVW / fi, ž , ž ! ž J ž ž ž ž

: Sg` I 6ž @S` dafZ I 5ž W5S^4ž/ fž 9dVf SbVd[e] žS] [Y efdSfWVd [S WU[e]a` _S] [Y fSe] ž B>aEA @7
ž , ž ! <gd S^ba` Vž ž

: VdLZ I žV H[e]ge I ž=ž/ fž 5[YSdWVWé_a] VdSe` aT d[e] fS] Vdž FZVdVWV aX7Lb` a_ [LbS` VEfS[ef[Lž
/ fi, ž , ž ! ž

: a'fi 5ž3žV>Sgckl Ež/ fž D[e] ShVd[e]a` S V [UVf[hWwWVfž 3` VdW Kag` YELZaa^aXBa'Uk EfgV[WdVWsdLZ
BSbWV EwVW bSVWž ž

=SWV ž: ž 4SffS[ai Dž5ž W9dWV I >ž/ fž 7Lb` a_ [U5Za[UVFZVckž 3` 7j bWU_ WfS^3` S'kefaX3` [S^
4VZSh[acž 5S_ Td[VWVG` [hVd[e]fk BdWž , ž I bSVWž

=S' W_ S I 6ž =` VdLZ I ž>ž W FZS Vd Dž: ž/ fž 8S[d VdSeS` La` efdS[f a` bcaXf eWY[Y, 7` fF W_ Wfe
[fZW_ Sd] Wž FZVb_ W[US` 7Lb` a_ [UDVWVW / fi, ž , ž ! ž

=S' W_ S I 6ž =` VdLZ I ž>ž W FZS Vd Dž: ž/ fž 3` a_ S[Vd, FZWVvai _ Wf WwVf 'aee ShVd[e]a` I S V
efSfgecgat[Sež <gd S^aX7Lb` a_ [UBVWbWVhW / fi, ž , ž ! Wž ž ž ž

=S' W_ S I 6ž W E_ [fZ I Hž/ fž: fVh[W i [fZ fZW `SgdVfVd [Vba` a_ [Už @aTWBd] W] 7Lb` až
_ [LbValg_ Wfe ž I @aTWBd] W5a_ _ [ffWž :` fVh[W Tk BcaXVead = Sčž9 gefSX>I XdW S V 6d
3` VžEabZ[W5dV] ž 6[eba` [TW yttf K@SS?e, sv]f. z' v?, .x@e, sv]pf. z' vt@t, e, -zt>ttzvvt@r`.ur.tvt@CAC@
|ryév-r@z@tv.%wS?yt-ž



=S` W_ S t 6 ž V F H V e] k l 3 ž / f i B d a e b W f f Z W d c k , S` S` S k e j e a X W U [e j a ` g` W d d e j] ž 7 l a ` a _ V i Z [L B / f i , ž 6 [e b a [T W y t t f K a e S S ? f . z e t v t , e r u u | r y e v - r e a u t t e a s] z t r t z , e t e f . . . t f v t p t y v , . C E f u w ž ! ž

=S` W_ S t 6 ž V F H V e] k l 3 ž / f i 5 Z S b [f d W F Z V e _ g S f j a ` Z W g d e f [U V S e - g W _ W f g ` W d g ` U a F S ` f k , : W g d e f [L e S` V T [S e W] = S` W_ S t 6 ž E ` a h [U B ž V F H V e] k l 3 ž c V ž i b S V e ž 5 S_ T d [V W W G ` [h V e] f k B d V e t 5 S_ T d [V W W G = ž , ž ž

=S` W_ S t 6 ž V F H V e] k l 3 ž / f i 5 Z a [U a h S ` g V e S` V X S_ V e ž 3_ V a [U S ` B e k L Z a ` a y k / f i , ž , ž ! ž J ž ž ž ž

=S` W_ S t 6 ž V F H V e] k l 3 ž / f i 5 Z a [U a h S ` g V e S` V X S_ V e ž 5 S_ T d [V W W G ` [h V e] f k B d V e t @ W K a d] t G E 3 ž , ž t b S V e ž

= ` V i e L z i ž > ž / f i F Z W W V a i _ W f V W W V S` V V i [W W U a X ` a ` d V i V e [T W] V [X W W U W U g d h V e ž F Z V B_ V a [U S ` 7 l a ` a _ [U D V i [M i / f i , ž

> S] e Z _ [S c k S` S` t H ž 5 Z W i ? ž V E S` f a d > ž / f i F Z W W a ` g f j a ` a X W U [e j a ` ž S] [Y g` W d d e j] , 8 d S _ [Y W W V e [_ a `] V k d e j b d V W W U V e ž < a g d S ` a X 7 j b i d _ W f S ` E a [S ` B e k L Z a ` a y k , ž 6 [e b a [T W y t t f K a e S S ? r e u . t , e r t r ? u u @ v t `] t e v z t y ? t y e e f r f v . t a W e r] p l V e B B ? f u w ž

> S] e Z _ [S c k S` S` t H ž 5 Z W i ? ž V E S` f a d > ž / f i 7 ` V a i _ W f V W W V [_ U S b g L Z [_ a `] V k e ž B Z [` a e b Z [L B ` F d S` e S f j a ` e a X F Z W D a S ` E a [V k 4 , 4 [a ` a y [L S ` E U [W U W / f i , ž 6 [e b a [T W y t t f K a e S S ? e t s z ? e] - ? e z y ? x , % e - t e . i z t] v t e T C F B H @ f u e . t t s O A A B E J ? f u w ž , ž ! d e f ž ž ž

? S L b a ` S V i 6 ž > ž = S W i ž : ž V i 4 S f f S [a i D ž 5 ž / f i 3 ` [S ` e L Z a [U e a h V d g ` U a F S ` a g f l a _ V e , 8 g d F Z V d V j b V d _ W f S ` d v g ` f e ž F Z W 7 l a ` a _ [U - a g d S t / f i , ž , ž ! ž

? a f V i 9 ž / f i > S ` a d _ W E A W c g W f j a ` e ž 5 S Z [V e W W S E A U g d f r A ; ` V g e f d [W W ž t 8 a ` V S f j a ` b a g d g ` W 5 g ` f g d W W E A U g d f r A ; ` V g e f d [W W F a g ` a g e W 8 d S U W ; E E @ ž ž 6 [e b a [T W y t t f K a e S S ? w e t z ? , . . x e ž

D S T [t ? ž / f i B e k L Z a ` a y k S` V W a ` a _ [U e ž 4 W i W i G ` [h V e] f k a X 5 S ` Y a d [S i 6 W d S f _ W f a X b e k L Z a ` a y k ž 6 [e b a [T W y t t f K a e z t v t w . x ? z t t ? f t ` u u @ a u š u t e u š e] , r u P u z N B A ? B ? B E C ? J F F i 7 . v f N v f B t Q A V N f u ž

D a f Z i 3 ž 7 ž V E Z S b ` V k i > z E ž / f i E f S T ` V S ` a U S f j a ` e S` V f Z W b d S u f [e W a X_ S o j V f W e Y` ž E U [W f [X U T S Y] Y d a g ` V a ` f Z V E h V i [V e D [] e T S] b d [W ` W a ` a _ [U e [W U V e [_ W _ a c k a X 3 ` X W @ a T W F Z W D a S ` E i W [e z 3 U S W _ k a X E U [W U V e ž

E S _ g V e a ` t i ž V i L V U] Z S g e V d D ž / f i E f S f g e c c a T [S e [W U [e a ` _ S] [Y ž < a g d S ` a X D [e] S` V G ` U a F S ` f k / f i , ž , ž ! 4 8 ž

E S h S Y W > ž / f i 8 a g ` V S f j a ` e a X e S f j e f [U e i [V k ž E W a ` V c v [f j a ` t @ W K a d] t 6 a h V e ž

E [_ a ` t : ž 3 ž 7 Y [V i ? ž H [S W D ž V i ? S d [e d D ž / f i 7 l a ` a _ [U e T a g ` W W d S f j a ` S [f k S` V f Z W b a Y [f i h V d V a ` g f j a ` ž 7 z 7 Y S d ž , ž ž ž ž t b S V e ž

E i b [d a t 9 ž 9 ž / f i ? V S e g d [Y d e j S h V e] a ` , 3 ` S ` V i d S f [h M S b b c a S U Z ž F Z W D V i W a X 7 l a ` a _ [U e S` V E f S f e f [U e / f i , ž , ž ! ž

F Z S V i D ž : ž / f i F a i S d V S b a e f [h W F Z W d c k a X U a ` e g _ V d U Z a [U W ž - a g d S ` a X 7 l a ` a _ [U 4 V i Z h [a d S` V A d S` [] S f j a ` t / f i , ž , ž ! ž / f i ž ž

F h V e] k l 3 ž V i = S` W_ S t 6 ž / f i F Z W X d S _ [Y a X W U [e j a ` e S` V f Z W b e k L Z a ` a y k a X U Z a [U W E U [W U W / f i , ž , ž ! e [W U W ž ž

h S ` 6 [] t 7 ž V i h S ` = [b b W T V i M i 6 ž / f i F d S V [Y i [W , A ` f Z W W V a i _ W f V W W V i ` a e e S h V e] a ` t S` V f Z W U a _ b S c S T [f k a X U a ` e g _ V d Y a a V e ž < a g d S ` a X 7 l a ` a _ [U B e k L Z a ` a y k / f i , ž , ž ! E ž / f i ž ž

H a ` @ V j _ S ` t ž V i ? a d W e V d t A ž / f i F Z W d c k a X Y S_ W e S` V W a ` a _ [U T V i Z h [a d S` B d [U i a ` G ` [h V e] f k B d V e t B d [U i a ` t G E 3 ž d V W ž / e f W f i , ž ž

I [] [` e a ` t @ ž / f i 3 ` [f a V g U f j a ` f a T V i Z h [a d S ` W a ` a _ [U e , 3 Y g [W V e d e f g W W f e ž B S Y d S h W ? S U [` S ž , ž t b S V e ž



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