

LD LVLVAPNAKPPVCRTMDYGKFRFEQQKKEKEARK LDLVEEVAPHAKPPVCRIMDYGKYKYEQSKRERDARK L DL V K I S P T A V P P V CK L M D Y GKF KFEQQQKREKAARK LDLVNVAP QAKPPVCRIMDYGKFKFEQQKREREARK LDLVVEVAPNARPPVCKIMMYGKYKYETAQKARESRK



 L D L V N V A P T A KP P V CRR M D Y GKYR Y EMQKKEKEAR K L DLV K I A P QA QP P V CKFLDDYGKYRFEMQKRDKEAKK L D L V K I A P Q A K P P V C K VMMDYGGKYRRFE QA K R E K EA K K

 L D L V L D L V E I S P N A EP P V C R I M D Y G K F L Y E E K S K
 L D V KI S P NAVP P V C K L M D Y G K Y R F E Q T K R D K E A K K
 $M D L V V K I A P Q A D P P V$ CKI MD YGKFKFEQAKREKEAKK

 L D L V L I A P TA AKP P V CK I M N Y GK F L Y E Q TKKK DK EA KK L DLVVVSE DAQP PVVRIMDYGKYKFEQEKRAKEARK
 L DLVEVVAPNAKPPVCKLIDDYGKYKYEMDKKNRESKK
 L D L V K I A P Q A N P P V CK L M DF GKYRYE L S K REKEAKK

 L D L V E V S P T A Q P P V C R I M D F GK F M Y E T E K R ERAAAK K LDLVLVAAPNAKPPVVRIMDYGKFKFEQQKKDREARK LDLVEEVAADARPPVCRILDYSKYRYEQAQKQKAARK DLVEVVSPNANPPVCKLMDYGKYKFEMDKKNRDAKR L DLVVKV S P G A K P P V C K L DD Y G K Y K Y E L A K K E K E S K K
 L D V EIA P NAKPPVVARIMNYGKYRYEQQKREKEAKK L DLVEVVSPNANPPVCKI LDFGKYRYEQEKRMREAKK LDLVEVVAAQAEPPVCKLLDYGKFKYESQKKAQEARK L DLVVEVSPNANPPVCKILDVGGYRFEQEKKDRDSKK LDLVNVAAPNAKPPVCRIMDFGKFKYEQSKKEKESRK L D L V L V A P N A K P P V C R I M D Y GK F R F E Q Q K K E K E Q R K L DL CLI NPNGNPPVGKVMDYNKYRYEKQKREKEADK L D L V L V G P N A S P P V A R R L LD Y G K WR Y E Q Q Q A L K E A R K
 L D L V EVVSPNVVP PV CKLMMDYGRFKYDQNKKENEARK L D L V A I S L L D A D P P V C R I M D Y S K F R Y E A QKK K R E A QK L DLVEVVAPNGRPPVCRIMNYGKYRYEQQKRDKEA
L D L V
L D L V K V $V$ A P Q A K P P V C K I MD Y G K Y R Y E LIDK K E K E S R K

L DLVVEVSPNASPPVCKI MDYGKFKYQQTKKLQEAKK


L D L V E EVVAS S N S T P P V C C K I M D Y G K F K Y E Q A R K A K E A K K
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LDLV NI S PNANP PV CKI LD YGKYRYELQKREKEA
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L D L V

L D L V K V AP QAKP P V CK I I D Y GKY RYEMARKAKEAKR
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V D L V E I A P TASSPPVVRLMDYGKFKYEEQKKNHEAR

L DLV VEI A P TAK P P V CRVVMDYSKFKFEKNKK DREARK

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MD L V E I $\operatorname{S}$ P $\operatorname{N}$ A A NP P V C K K I M D Y G K F K Y E
LD L I E I S P T A D P P V C K I L D D Y S K F L L DLV EVVSPTAKP PV AKI MDLGGKYKYQAQKKAAEARK L DLVVEAAP QANPPVCRILDYGKYKYQLQKKEKDARK L D L V E I A P N A EP P V CKVVMDYRKFKY E Q DRKAK A A R K LDLVEVSPKANPPVCKI LEMGSFVYQKEKELKKQRK L DLVLVSDTANPPVCRILDYGKYKYQQ
L DLLLVVSMNSNPPVAKLVVDYGKFKYEQKKKERESKK L DLV EI S P D A K P P V CR M M F GK F T Y Q
LDLVEVSPNADPPVCKFLDVGKYRYEAQKKANAARK $V D L V V E I S P N A A E P P V C R I M D V G G K G L Y E$
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L D L V K V A P N A K P P V CRL MD Y GKYRY DM
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 RIV N G E I R L K E V V R L V G L L G G E A L G I V S M E E A L D A A DK A G I NERI N YP QL RVV D A D G S QLLGVIT REAALEVARDRE



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H R L N E L I T D D N E I R L I K F D G E P G G I V

K F RVNNMIHVPEVRVI LGDGHQQ I MKTQEALQRQAQKEG $M R L I D Q N G D Q L G I K S K Q E A L E D A A R R N$ $K$ I N E R I R F P P $R R N Q R I R V P E I R V I S P E G K Q L G I D A T E R A L A L A Q Q B N$
 QV N S Q I R D K E V R L I D V D GTMMLGIMS AREA QMKANERED
 K NV N



 K R NRVNKEINVQEVRLIGADGNQVGVI STREALTLAQEAS K E V N I N R E ITT A A R V R L I
QELRIN NQ DRVKE VR $V$ P M N E N I R A A E V R R V L A E D K T P L

 1 N H H I K N S S K I





 N E R I R F P N I R V I D S E G E QL G I I T P K E A L A I A Q E K G
 $R R N E Q I R A R E V R V D D A D G S Q L G I M S R N D A V A V A K E Q G$ $R \square N D D I R A A R V L L I D A E G E K Q G E M P V D A A L D A A R E A G$ $M \square N G Q \square R D K E V R$ V
 K N F T C N E S I K E K R E V

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 YKI NDKI R A REVVRIVGDFVEGNAVLISLSEAIIKLAEANE K EVLLNEEI RADELRCI GDD GKVYGIISVVEALGIANRLG
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Y R VGRK $\square K$ AK QV $V R$ V I G E D G K Q I G I L P L L E E A L K I A A D E K G $M R V V L D S G E M L G V L T R E E A L E A A H N R G$

VIMND I $\quad$ IRAREDREQLGGLADRDALRMAQERN
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$V$ I D E E G N Q L G EL
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 $\square N Q D \square R A A R V L L I D Q N G E K Q G V M P L$ SAALEAAEAA G
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 $M R V I$ GEDGE QL GIMSAKDAMKLAREAE

 P E V R L I | 1 | $R$ | $S$ | $A$ | $S$ | $V$ | $R$ | $L$ |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
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| $R$ | $V$ | $N$ | $E$ | $L$ | $R$ | $V$ | $L$ |


 $M V G P N G E Q V G \backslash V R V E D A L R D A A E A D$





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KHRINDMIRTPEVR VGGSGGLIGRDAQRVADEQG QQFRNM R QQFRUNEYIRTPRVSVI DDEGNKLGEMNTRDALSVAREKE INEKURAEEVMLIGANGEKMGLLPFSEALKSASSAS RTNGETRAQEVRMVGPDGKQFGUMDTKEALETALSGG RTDYQIRAPSLRVIDSEGKLIGVLTKDEAVRKAKEAN R $\ \mathrm{NRDIRVPRVLLIDETGEKQGI}$ MPTEAALEAAEQAG
MNEE:AASEVRVISVKGEQLGIMSTQQALQRASDEG
NEDIKAKELRVIGSDGSQLGIMETKKALQLAYQEG MNDRILASDERLISENKEKLGVMSRKEALALASSKN
$M \perp G V N G E Q V G 1 D V A P A A K E L A E E S G$
RपNEKTEAEFVRLVMDEGH CIVSRSEALERARKLE
MNQQI KAPQVLLIDHENNNLGLTDTAKALQMAKDVK
YRDNEQURAKEVRVGDDMESK VYP FAALKLAEEKE APEVRLSGPENEPLGIVPIQEALRMAGELD
■NDF TRAREIFVIGENGDKRGVMSKREAIELAESKN GPGGEQVGI VRVEDALRLATEAD
YRTNEETRSEEVRVVGNNGEQRGMSQQALELAEQTD MNQA RASEVRLISADGDQLGUPTRDALNQAMDQD MRVI DQDGNNLGEISKSEALSKADEAG $M H A D G S Q A G L M S R A D A L Q L A S S A E$
$M H G L E G E Q L G U K P L S E A Q A L A D S A N ~$ MN $\square$ NED $\square$ SAKEVRGVKEDGEQMGVVDVDAMKAAREDS MI GPDKEALGIVSTQDALHKAREYG M1 DAEGONGAVPTDQALRMAEEAG

YRVNEYDRTP\|VFVIGENKEQGEMNNVDADALAKSKG HRDNEORAAMRLVGVNEPLGVKLAEAFRQSEQLID KFRNEDGEFDELRVLDEDKEMRGVMSTDEALELAAEKE RKFRTNQF:KVPEVRLVDFDGTMGVIKTADALAKAQAKD VLI NEQ KADEVVLTGLAGEKLGVVSKSEALAMARSKG
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MVNEFLPNGQYLVIDDEGNKLGLFDRNQALNVAQERD MRLVGENVEGGVYPTRKALEVANEDE VGRKTPHREMQVIDEDGENGGMHRADVIRIDNEN MNER】RAPILRLIGESQQIGUPREDAFQRAERDE MUDLDGEQVGVLSLQNALEKAQTDG Ke LVNENTPNVELLVIDNEGNNLGKMLRDKATKLSYEKD
 RUNEDIHIGPIRLVKEDGEAIGIVETSKALGMAKDAG LINERIPYKELLVID SOGKKIGGLVKSEALRQAREAE EHVINNAIPYKKVFVLGPSGEKIGVLTKEEALEKASEYN DRKI NRAIVARMVRLVGADGHE ILSRYEALNRAQQEG

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$M$ KDDGEQVGVVISLSEALEAADQAS
$M$ ПNGFDRARETFMI DEEGENKYGTKLEVAALEMARDAG KYRDVRVIGSDGEQGGGMQSRQALIN:AREEG





K Y K K N NE IEAEE LIVLDEEGKNDGTMSKKAALDMAFEKE
 K EALR $\operatorname{l}$ IA GEK N
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REHR $\square$ NED $\square$ TES QVR LVGEK GTE L
$\square S T R D A L Q R A R S Q N$
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$M G V Y P \square S K$ A LEMAA E D DVGE
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 MS S R S A L E L A A D Q G

Q E H WV N R N I P F VVKVGVI G S D N E KII GI I ETRREAIMEMAK E Q K

$M T V G Q A R N L A D E A G$
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$M \square G S D G E M V G V L S R D E A L S L$ LA A E E G
M N Q N GENLGVI DTRDALRMAKESK


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110 20 40
 M G P D G T Q I GVVP IK D A L E A A Q E V G
 DEEQYGVVSIDRRAREIADELG RDAQRIADEQN VGRK $\square$ HER I I HVIDEKGNDLGNMHRADVI RLLNERD VS LKEALTKAEEAG
$M R \square N R E \square R A D R \square R M S E D G R A Y G K V S L D Q A L F L A Y D R G$ $K V L L N E E V V D D R V R F V D T Q G E P K$ IVVDSAKALLETAYNKG
 EHVINNQHDPYKKVF VF DQNNEK历GVMPSTKEA QGLA N NK N

VA GKEVES GTVIK T R $\square$ AA S WA N K L
 RKIS ERII HVVDENGNDLGHMHRADVI RLLDERH $M G \| V B A E A L R R A Q D V G$ LIG S N GEK Q GLV D F F V A L E S A R V A S
(
 MT TSEALKIAEGAG VGRK $\square R D G \square V Q V F D E K G N D L G H M Q Q A D V I E L M N T R E$ MATDQALAMAEEAG MSPREAMVKAEASG VS I R D A Q NLA DEAG
 $M R L V G A E G E Q V G I V S N A E A Q A Q A E A A G$
 $\square G R K \square S$ QR $\square$ H L F DEK G N D M GNMHRA D VI R L M D E R D MSLEAALARAQADG
 VL D D GKF VGGD F D T T E A A L MSRDNALKLAEDAG
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 MNDEI QGDTFRLVEGEGNSR VVSREEMFSDAKQKQ
 $M I D E N G A Q V G V I S K A E E A L A C A A K G V E$ MS R D D A L RAA QEKG $M V G V V S R R S A A L$ R LDA A D A G
 I L S R DEAL AKAQAAG

GAE GE QVG IVPDLAEARAAAEAAG
 K K V PL LEEIRRAHSVTVVLEDGTVRENVDKRTAVREAKSGG $M F V I \quad G P E$ G E Q I G V L T R T A A L E K A A E M K $E L R L \quad S A$ G G K Q L GV M A P Q Q A L A LAAR T E G


MTPERGNELARDAG
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ERVESSTVR LLDE QKRMVGVVPVNEAVQIAE D ND VGRKISERIIHVLDEKGNDLGNMHRANDIRLMDERD
 $M D D Q E N N N R G L T D T R E A L Q L A E S V G$
 NTP $\square$ NEA $\square$ AFDEMRVL

ERQ
MK A A R
VS 1 REALEAAKKEK
$\square R L V D S A N R L I G V Y N L H E A K K V C D Q M G$ QPFVINRRTEFRNI RLI DENKGFYD SID IVKAKDMAKNAG NDEIEADII QIVNQDG QLDVPTRKSNVIFSMRRN

 MY T R EA I DQAK DA G ADEAK
MT TT FAMAAARSAG
 $1 \mathrm{~V} S \mathrm{FEEALR}$ KAKEEN MDIK TAL QAARDAE
TINEADRSSFVQVVNDEGDLDPPTRLEDVLESFNHSE $K L I V N D S I P F D T V R V L K D R K F L G D F T L N E A I D R A K S H N$ VPTRQA QEARSQG

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LDLVQIS DSDPIVCKVMDYGKY LY
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 L K LVKRNMGTQPPEYQLMT GDQDQEERLRLREMEK VLVEISATANPPV
I DLEEINPS $\quad$ QPPVCKLQDYGKFLYERSKQVQKQR
LDLVEI A P
LDLVCVAPNANPPVAKAMDYGKYRYEQER
MDLVLI QVEPK PI ARILDYGKFKYD
LDDVLI SPNAKPPVCKIMDYGKYRYEQAR
MDLVLI A DDNNRPITKI LD YG
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LD D E EVAAAARPPVCRVLDYSKYKYE
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L L V LI A DKSEPVI CKIVSYDKFRFNKEKKKKEQAR
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V DIVMINPS $\square$ RPAI CKATDYRDEDYQK
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