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Appendix

L

>A24

MNTTDCFI ALVHA IREIR AFFLPRATGRMEFTLHNGERKVFYSRPNNDNCWLNITILQLFRYVGEPPFDWVYDSPENLTLEAIEQLEELTGLELHEGGPPALV
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>A10

MNTTNCFI ALVYLIREIKTLFRSRTTGKMEFTLHNGEKKTFYSRPNNDNCWLNITILQLFRYVDEPPFDWVYNSPENLTLD AIKQLENFTGLELHEGGPPALV
IWN IKHLLTGIGTASRPSEVCMVDGTMCLADFHAGIF LKGQEHAVFACVTSNGWYAIDDEDFYPWTPDPSDVLVFPYDQEPLNGEWKTKVQKCLK

>C3

MNTTDCFI ALVHA IREIIAIFFPRTAGKMEFTLYTGEKKTFFYSRPNNDNCWLNAILQLFRYVDEPPFDWVYNSPENLTLEA IKQLEELTGLELHEGGPPALV
IWN IKHLLNTGIGTASRPSEVCMVDGTMCLADFHAGIF LKGQEHAVFACVTSNGWYAIDDEDFYPWTPDPSDVLVFPYDQEPLNGEWKTKVQKCLK

>O1

MNTTDCFI ALVQA IREIKALFLPRTTGKMEFTLYNGEKKTFYSRPNNDNCWLNAILQLFRYVEPPFDWVYSSPENLTLEA IKQLEDLTGLELHEGGPPALV
IWN IKHLLHTGIGTASRPSEVCMVDGTMCLADFHAGIF LKGQEHAVFACVTSNGWYAIDDEDFYPWTPDPSDVLVFPYDQEPLNGEWKAKVQRCLK

>O/SAR

MSTTDCFI ALLYAFREIKTLFLSRAQGKMEFTLHNGEKKTFYSRPNNDNCWLNITILQLFRYVDEPPFDWVYSSPENLTLD AIKQLEEITGLELHEGGPPALV
IWN IKHLLNTGIGTASRPSEVCMVDGTMCLADFHAGIF LKGQEHAVFACVTSNGWYAIDDEDFYPWTPDPSDVLVFPYDQEPLNGEWKAKVQRCLK

>SAT1

MKTDCFNVLFEIFHRLRHTFKAERKMEFTLYNGEKKTFYSRPNKHGNCWLNLSLLQLFRYVDEPLFESEYLSPENKTLDMIRQLSDYTKLD LSDGGPPALVLW
LIKDCQLTGVGTS TRPSEICVINGVMTLADFHAGIF IKGTEHAVFALNTSEGWYAIDDEVFYPWTPDPENVLAYVPYDQEPLDWDWQDRAGLFLR

>KNP1

MKTDCFSVLFEIFHRLRHTLTKTERKMEFTLYNGERKTFYSRPNKHGNCWLNLSLLQLFRYVDEPLFESEYLSPENKTLDMIKQLSDYTKLD LSDGGPPALVLW
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>SAT2

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LIKDCQLTGVGTS TRPSEICVINGVMTLADFHAGIF IKGTGHAVFALNTSEGWYAIDDEVFYPWTPDPENVLAYVPYDQEPLDWDWQDRAGLFLR

>SAT3

MKTDCFNALLEIFHRFRQTLNTRKMEFTLYNGEKKTFYSRPNTHGNCWLNLSLLQLFRYVDEPLFESEYLSPENKTLDMIKQLSDYTKLD LTDGGPPALVLW
LIKDCQLTGVGTS TRPSEICVINGVMTLADFHAGIF IKGTEHAVFALNTSEGWYAIDDEVFYPWTPDPENVLAYVPYDQEPLDWDWQDRAGLFLR

VP1

>A24

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PTAYNKAPFTRLALPYTAPHRVLATVYNGTSKYAVGSGRRGDMGSLAARVVKQLPASFNYGAIKADA IHELLVRMKRAELYCPRPLLAIEVSSQDRHKQKII
APAKQ

>A10

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PTAYNKAPFTRLALPYTAPHRVLATVYNGTSKYSASGSRGDLGSLATRVATQLPASFNYGAIKAIHELLVRMKRAELYCPRPLLAIEVSSQDRYKQKIIA
PAKQ

>C3

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NPTAYHKGPLTRLALPYTAPHRVLATYTGTTTTYTSARRGDS AHLAAAHARHLPTSFNF GAVKAETVTELLVRMKRAELYCPRILP IQPTGDRHKQPLIAP
AKQ

>O1

TTSAGESADPVTTTVENYGGETQIQRRQHTDVSFIIMDRFVKVTPQNQINILDLMQVPSHTLVGALLRASTYYFSDLEIAVKHEGDLTWVNGAPEKALDNTTN
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APVKQ

>O/SAR

TTSAGESADPVTTTVENYGGETQVQRRQHTDVSFIILDRFVKVTPKQINILDLMQTPAHTLVGALLRTATYYFADLEIAVKHEGNLTWVNGAPEALDNTTN
PTAYHKAPLTRLALPYTAPHRVLATVYNGNCKYGESPVTVNVRGDLQVLAQKAARTLTPSFNYGAIKATRVTELLYRMKRAETCYCPRPLLAIHPTAEARHKQKIV
APVKQ

>SAT1

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NPVVFVSNRGATRFALPFTAPHRCLATYNGDCKYKPGTAPRDNIRGDLAVLAQRIAGETHIPTFNNGRIYTEAEVDVYVRMKRAELYCPRPLLAITHYDHNGK
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>KNP1

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NPVVFVSKGRTRFALPFTAPHRCLATAYNGDCKYKPGTAPRENIRGDLATLAARIASETHIPTFNNGRIYTDTEVDVYVRMKRAELYCPRPVLTHYDHGGR
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>SAT2

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SPIGVKKQ

>SAT3

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YKTPLVKPEKQ

VP2

>A24

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YVHVAGELPSKE

>A10

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YVHVAGELPSKE

>C3

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NVHVAGELPSKE

>O1

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NVHVAGEFPSKE

>O/SAR

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>KNP1

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>SAT2

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>SAT3

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VP3

>A24

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>C3

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GKDFELRLPVDARQQ

>O1

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>O/SAR

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>SAT1

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>KNP1

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>SAT2

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SLNYHFMYTGPTHKAKFMVAY IPPGIETDRLPKTPEDA AHCYHSEWDTGLNSQFTF AVPYVSA SDFSYTH TDTPAMATTNGWVA VQVTDTHSAEAAVVVS
VSAGPDLEFRFPVDPVRQ

>SAT3

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GSINLHFMFTGPTQSKARFMVAY IPPGTTVPVNTPEQAAHCYHSEWDTGLNSKFTFTVPYMSAADFAYTYCDEPEQASAQGWVTLYQITDTHDPNSAVLVSVI
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VP4

>A24

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>A10

GAGQSSPATGSQNSGNTGSIINNYMQQYQNSMDTQLGDNAISGGSEGSTDTTSTHTTNTQNNDWFSKLASSAFTGLFGALLA

>C3

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>O1

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>O/SAR

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>KNP1

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>SAT2

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>SAT3

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2A

>A24

LLNFDLLKLAGDVESNPG

>A10

LLNFDLLKLAGDVESNPG

>C3

LSNFDLLKLAGDVESNPG

>O1

TLNFDLLKLAGDVESNPG

>O/SAR

LLNFDLLKLAGDVESNPG

>SAT1

LGNFELLKLAGDVESNPG

>KNP1

LCNFDLLKLAGDVESNPG

>SAT2

LCNFDLLKLAGDVESNPG

>SAT3

LCNFDLLKLAGDVESNPG

2B

>A24

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VVKKISDSLSSLFHVPAPVFSFGAPI LLAGLVKVAS SFFRSTPEDLERA EKQ

>A10

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VVKKISDSLSSLFHVPAPAFSFGAPI LLAGLVKVAS SFFRSTPEDLERA EKQ

>C3

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VVKKISDSLSSLFHVPAPVFSFGAPI LLAGLVKVAS SFFRSTPEELERA EKQ

>O1

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VVKKISDSLSSLFHVPAPVFSFGAPV LLAGLVKVAS SFFRSTPEDLERA EKQ



>0/SAR

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VVKKISDSLSSLFHVPAPVFSFGAPI LLAGLVKVAS SFFRSTPEDLERAEKQ

>SAT1

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VVKKISDALSSVFHVPAPVFSFGAPI LLAGLVKVAS TFFRSTPEDLERAEKQ

>KNP1

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>SAT2

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VVKKISDALSSVFHVPAPVFSFGAPI LLAGLVKVAS TFFRSTPEDLERAEKQ

>SAT3

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VVKKISDALSSVFHVPAPVFSFGAPVLLAGLVKVAS TFFRSTPEDLERAEKQ

2C

>A24

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PVVVCLRGKSGGKSF LANVLAQAIS THF TGR TDSVWYC PPDPDFDGYNQQT VVVMDDL GQNPDKDFKYFAQMVST TGF IPPMASLEDK GKPF NSKVIIA
TTNLYSGF TPRTMVCPDALNRRFHFD IDVSAKDG YK INNKLDI IKALED THTNPVAMFQYDCALLNGMAVEMKRMQQDMFKPQPPLQNVYQLVQEVIERVEL
HEKVSSHP IFKQ

>A10

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TTNLYSGF TPRTMVCPDALNRRFHFD IDVSAKDG YK INNKLDI IKALED THTNPVAMFQYDCALLNGMAVEMKRLQQDMFKPQPPLQNVYQLVQEVIERVEL
HEKVSSHP IFKQ

>C3

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PVVVCLRGKSGGKSF LANVLAQAIS THF TGR TDSVWYC PPDPDFDGYNQQT VVVMDDL GQNPDKDFKYFAQMVST TGF IPPMASLEDK GKPF NSKVIIA
TTNLYSGF TPRTMVCPDALNRRFHFD IDVSAKDG YK INNKLDI IKALED THTNPVAMFQYDCALLNGMAVEMKRMQQD VFKPQPPLQNVYQLVQEVIERVEL
HEKVSSHP IFKQ

>01

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PVVVCLRGKSGGKSF LANVLAQAIS AHF TGR TDSVWYC PPDPDFDGYNQQT VVVMDDL GQNPDKDFKYFAQMVST TGF IPPMASLEDK GKPF NSKVIIA
TTNLYSGF TPRTMVCPDALNRRFHFD IDVSAKDG YK INNKLDI IKALED THTNPVAMFQYDCALLNGMAVEMKRMQQDMFKPQPPLQNVYQLVQEVIDRVEL
HEKVSSHP IFKQ

>0/SAR

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HEKVSSHP IFKQ

>SAT1

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PVVVCLRGKSGQGKSF LANVLAQAIS THF TGRVDSVWYCPDPDHF DGYNQAVVVMDDL GQNPDKDFKYFAQMVST TGF IPPMASLEDK GKPF NSKVIVA
TSNLYSGF TPR TMVCPDALNRRHFHD IDVS AKD GYKVNRLDI IKALED THTNAPAMFN YDCALLNGS AVEMKRLQQD VFKPLPLNSLYQLVDEVI ERVKL
HEKVSSHPIFKQ

>KNP1

LKARDINDIFAILKNGEWLVKLI LAIRDWIKAWISSEEKYISM TDLVPRILECQRNLNDPSKYQESKEWLENAREACLKNGNVHI ANLCKVNAPAPSKSRPE
PVVVCLRGKSGQGKSF LANVLAQAIS THF TGRVDSVWYCPDPDHF DGYNQAVVVMDDL GQNPDKDFKYFAQMVST TGF IPPMASLEDK GKPF NSKVIVA
TSNLYSGF TPR TMVCPDALNRRHFHD IDVS AKD GYKVNRLDI IKALED THTNAPAMFN YDCALLNGS AVEMKRLQQD VFKPLPLNSLYQLVDEVI ERVKL
HEKVSSHPIFKQ

>SAT2

LKARDINDIFAILKNGEWLVKLI LAIRDWIKAWISSEEKYISM TDLVPRILECQRNLNDPSKYQESKEWLENAREACLKNGNHHI ANLCKVNAPAPSRPE
PVVVCLRGKSGQGKSF LANVLAQAIS THF TGR TDSVWYCPDPDHF DGYNQAVVVMDDL GQNPDKDFKYFAQMVST TGF IPPMASLEDK GKPF NSKVIVA
TSNLYSGF TPR TMVCPDALNRRHFHD IDVS AKD GYKVNRLDI IKALED THTNAPAMFN YDCALLNGS AVEMKRLQQD VFKPLPLNSLYQLVDEVI ERVKL
HEKVSSHPIFKQ

>SAT3

LKARDINDIFAILKNGEWLVKLI LAIRDWIKAWISSEEKYISM TDLVPRILECQRNLNDPSKYQESKEWLENAREACLKNGNHHI ANLCKVNAPAPSKSRPE
PVVVCLRGKSGQGKSF LANVLAQAIS THF TGR TDSVWYCPDPDHF DGYNQAVVVMDDL GQNPDKDFKYFAQMVST TGF IPPMASLEDK GKPF NSKVIVA
TSNLYSGF TPR TMVCPDALNRRHFHD IDVS AKD GYKVNRLDI IKALED THTNAPAMFN YDCALLNGS AVEMKRLQQD VFKPLPLNSLYQLVDEVI ERVKL
HEKVSSHPIFKQ

3A

>A24

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DKTLDEAEKNPLETSGASTVGFRRERPLPGQKARDENSEPAQPAEQPQAE

>A10

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DKTLDEAEKNPLETSGASTVGFRRERSLTGQKARDDVNSEPAQPAEQPQAE

>C3

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>O1

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>O/SAR

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>SAT1

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>KNP1

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>SAT2

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>SAT3

ISIPSQKSVLYFLIEKGQHEAAIEFYEGMVHDSIKEELKPLEQTSFAKRAFKRLKENFEIVALVVLLANIVIMIRETRKRQKMVDDALDEYIEKANITTD
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3B1

>A24

GPYAGPLERQKPLKVRAKLPQQE

>A10

GPYAGPLERQKPLKVRAKLPQQE

>C3

GPYAGPLERQKPLKVRAKLPQQE

>O1

GPYAGPLERQKPLKVRAKLPQQE

>O/SAR

GPYTGPLERQKPLKVRTKLPQQE

>SAT1

GPYAGPLERQQPLKAKLPRAE

>KNP1

GPYAGPLERQQPLKAKLPKAE

>SAT2

GPYAGPLERQQPLKAKLPQAE

>SAT3

GPYAGPLERQQPLKAKLPRAE

3B2

>A24

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>A10

GPYAGPMERQKPLRVKAKAPVVKE

>C3

GPYAGPMERQKPLKVKAKAPVVKE

>O1

GPYAGPMERQKPLKVKAKAPVVKE

>O/SAR

GPYAGPMERQKPLKVKAKAPVVKE

>SAT1

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>KNP1
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>SAT2
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>SAT3
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3B3

>A24
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>A10
GPYEGPVKKPVALKVKARNLIVTE

>C3
GPYEGPVKKPVALKVKAKNLIVTE

>O1
GPYEGPVKKPVALKVKAKNLIVTE

>O/SAR
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>SAT1
GPYEGPVKKPVALKVKAKAPIVTE

>KNP1
GPYEGPVKKPVALKVKAKAPIVTE

>SAT2
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>SAT3
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3C

>A24
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HVDPEPHHE

>A10
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HVDPEPHHE

>C3
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HIDPEPHHE

>01

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HIDPEPHHE

>0/SAR

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>SAT1

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>KNP

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>SAT2

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FRDTMKLSKGSPPVGVVNNADVGRILFSGDALTYKDLVVCMGDGDTMPGLFAYRAGTKVGYCGAAVLAKDGAKTVIVGTHSAGGNGVGYCSCVSRSMMLQKMA
HIDPPPHTE

>SAT3

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HIDPPPHTE

3D

>A24

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SNNGPQIGSAVGCNPDVDWQRFQTHFAQYRNVWDVDSAFDANHCSDAMNIMFEEVFRTEFGFHPNAEWILKTLVNTTEHAYENKRITVEGGMPGCSATSII
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>A10

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SNNGPQIGSAVGCNPDVDWQRFQTHFAQYRNVWDVDSAFDANHCSDAMNIMFEEVFRTEFGFHPNAEWILKTLVNTTEHAYENKRITVEGGMPGCSATSII
NTILNNIYVLYALRRHYEGVELDYTMISYGDDIVVASYDLDLFEALKPHFKSLGQITPADKSDKGFVLGHSITDVTFLKRHFHMDYGTGFYKPMASKTL
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>C3

GLIVDTRDVEERVHVMRKTCLAPTVAHGVFNPEFGPAALSNRDPRLNEGVLDEVIFSKHKGDKMSEEDKALFRRCAADYASRLHSLVLTANAP
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FCAQMHSNNGPQIGSAVGCNPDVDWQRFQTHFAQYRNVWDVDSAFDANHCSDAMNIMFEEVFRTEFGFHPNAEWILKTLVNTTEHAYENKRITVEGGMPGCS

ATS IINTILNNIYVLYALRRHYEGVELD TYT MISY GDD IVV ASDYD LDFEAL KPHFKSLGQTITPADKSDKGFVLGHS ITDVTFLKRHFHMDYGTGFYKPVMA
SKTLEAILS FARRGTIQEKLISVAGLAVHSGPDEYRRLFEPFQGLFEIPSYRSLYLRWVNAVCGDA

>O1

GLIVDTRDVEERVHVMRKT KLAP TVAHGVFNPEFGPAALSNKD PRLNEGVVLD E VIFSKHKGDT KMSEEDKALFRRC AADYASRLH SVLGTANAPLSIYEAIK
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LNNIYVLYALRRHYEGVELD TYT MISY GDD IVV ASDYD LDFEAL KPHFKSLGQTITPADKSDKGFVLGHS ITDVTFLKRHFHMDYGTGFYKPVMA SKTLEAIL
SFARRGTIQEKLISVAGLAVHSGPDEYRRLFEPFQGLFEIPSYRSLYLRWVNAVCGDA

>O/SAR

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LNNIYVLYALRRHYEGVELD SYT MISY GDD IVV ASDYD LDFEAL KPHFKSLGQTITPADKSDKGFVLGHS ITDVTFLKRHFHMDYGTGFYKPVMA SKTLEAIL
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>SAT1

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NGPQIGSAVGCNPDVDWQRF GCHFAQYRNVWDI DYS AFDANHCSDAMNIMFEEVFRFEEFGFHPNAVWILKTLINTEHA YENKRITVEGGMPSGCSATS IINTI
LNNIYVLYALRRHYEGVELSHY T MISY GDD IVV ASDYD LDFEAL KPHFKSLGQTITPADKSDKGFVLGQSI TDVTF LKRHFHLDYGTGFYKPVMA SKTLEAIL
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>SAT2

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GVDGLDAMEPDTAPGLPWALRGKRRGALIDFENGT V GSEIEAALKLMEKKEYKFTCQ TFLKDEIRPLEKVKAGKTRIVDVL PVEHIIYTRMMIGR FCAQMHSN
NGPQIGSAVGCNPDVDWQRF GTHFAQYKNVWDI DYS AFDANHCSDAMNIMFEEVFRFEEFGFHPNAVWILKTLINTEHA YENKRITVEGGMPSGCSATS IINTI
LNNIYVLYALRRHYEGVELSHY T MISY GDD IVV ASDYD LDFEAL KPHFKSLGQTITPADKSDKGFVLGQSI TDVTF LKRHFHLDYETGFYKPVMA SKTLEAIL
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>SAT3

GLVVDTREVEERVHVMRKT KLAP TVAHGVFQPEFGPAALSNND KRLNEGVVLD E VIFSKHKGDA KMSEADKRLFR LCAADYASHLHNV LGTANSPLSVFEAIK
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NGPQIGSAVGCNPDVDWQRF GTHFAQYKNVWDI DYS AFDANHCSDAMNIMFEEVFRFEEFGFHPNAVWILKTLINTEHA YENKRITVEGGMPSGCSATS IINTI
LNNIYVLYALRRHYEGVELSHY T MISY GDD IVV ASDYD LDFEAL KPHFKSLGQTITPADKSDKGFVLGQSI TDVTF LKRHFHLDYETGFYKPVMA SKTLEAIL
SFARRGTIQEKLISVAGLAVHSGQDEYRRLFEPFQGT FEIPSYRSLYLRWVNAVCGDA