```
                                 (((((.((....(((((.....)))))((.(.(((((.......)))))).).)).((((
chr-9.trna505-Ile-AAT    GGCCU-AU----UAGCUCAGCUGGUUAGAGCGUCGUGCUAAUAACGCGAAGGUC--GCAG 53
chr-5.trna396-Ile-AAT    GGCCU-AU----UAGCUCAGCUGGUUAGAGCGUCGUGCUAAUAACGCGAAGGUC--ACAG 53
chr-10.trna164-Ile-AAT   GGCCU-AU----UAGCUCAGCUGGUUAGAGCGUAGUGCUAAUAACGCGAAGGUC--ACAG 53
chr-1.trna212-Ile-AAT    GGCCU-AU----UAGCUCAGCUGGUUAGAGCGUCGUGCUAAUAACGCGAAGGUC--GCAG 53
chr-2.trna407-Ile-AAT    GGCCC-AU----UAGCUCAGCUGGUUAGAGCGUCGUGCUAAUAACGCGAAGGUC--GCAG 53
chr-1.trna214-Ile-AAT    GGCCU-AU----UAGCUCAGCUGGUUAGAGCGUCGUGCUAAUAACGCGAAGGUC--GCAG 53
chr-1.trna347-Ile-AAT    GGCCU-AU----UAGCUCAGCUGGUUAGAGCGUCGUGCUAAUAACGCGAAGGUC--GCAG 53
chr-1.trna350-Ile-AAT    GGCCU-AU----UAGCUCAGCUGGUUAGAGCGUCGUGCUAAUAACGCGAAGGUC--GCAG 53
chr-10.trna466-Ile-AAT   GGCCU-AU----UAGCUCAGCUGGUUAGAGCGUCGUGCUAAUAACGCGAAGGUC--GCAG 53
chr-2.trna386-Ile-AAT    GGCCU-AU----UAGCUCAGCUGGUUAGAGCGUCGUGCUAAUAACGCGAAGGUC--GCAG 53
chr-10.trna133-Ile-AAT   GGCCU-AU----UAGCUCAGCUGGUUAGAGCGUCGUGCUAAUAACGCGAAGGUC--GCAG 53
chr-2.trna435-Ile-AAT    GGCCU-AU----UAGCUCAGCUGGUUAGAGCGUCGUGCUAAUAACGCGAAGGUC--GCAG 53
chr-2.trna437-Ile-AAT    GGCCU-AU----UAGCUCAGCUGGUUAGAGCGUCGUGCUAAUAACGCGAAGGUC--GCAG 53
chr-9.trna184-Ile-AAT    GGCCU-AU----UAGCUCAGCUGGUUAGAGCGUCGUGCUAAUAACGCGAAGGUC--GCAG 53
chr-5.trna290-Ile-AAT    GGCCU-AU----UAGCUCAGCUGGUUAGAGCGUCGUGCUAAUAACGCGAAGGUC--GCAG 53
chr-5.trna385-Ile-AAT    GGCCU-AU----UAGCUCAGCUGGUUAGAGCGUCGUGCUAAUAACGCGAAGGUC--GCAG 53
chr-6.trna235-Ile-AAT    GGCCU-AU----UAGCUCAGCUGGUUAGAGCGUCGUGCUAAUAACGCGAAGGUC--GCAG 53
chr-6.trna421-Ile-AAT    GGCCU-AU----UAGCUCAGCUGGUUAGAGCGUCGUGCUAAUAACGCGAAGGUC--GCAG 53
chr-14.trna76-Ile-AAT    GGCCU-AU----UAGCUCAGCUGGUUAGAGCGUCGUGCUAAUAACGCGAAGGUC--ACAG 53
chr-1.trna279-Ile-AAT    GGCCU-AU----UAGCUCAGCUGGUUAGAGCGUCGUGCUAAUAACGCGAAGGUC--ACAG 53
chr-13.trna91-Ile-AAT    GGCCU-AU----UAGCUCAGCUGGUUAGAGCGUCGUGCUAAUAACGCGAAGGUC--ACAG 53
chr-2.trna293-Ile-AAT    GGCCU-AU----UAGCUCAGCUGGUUAGAGCGUCGUGCUAAUAACGCGAAGGUC--ACAG 53
chr-6.trna701-Ile-AAT    GGCCU-AU----UAGCUCAGCUGGUUAGAGCGUCGUGCUAAUAACGCGAAGGUC--ACAG 53
chr-9.trna213-Ile-AAT    GGCCU-AU----UAGCUCAGCUGGUUAGAGCGUCGUGCUAAUAACGCGAAGGUC--ACAG 53
chr-3.trna147-Ile-AAT    GGCCU-AU----UAGCUCAGCUGGUUAGAGCGUCGUGCUAAUAACGCGAAGGUC--ACAG 53
chr-3.trna185-Ile-AAT    GGCCU-AU----UAGCUCAGCUGGUUAGAGCGUCGUGCUAAUAACGCGAAGGUC--ACAG 53
chr-6.trna618-Ile-AAT    GGCCU-AU----UAGCUCAGCUGGUUAGAGCGUCGUGCUAAUAACGCGAAGGUC--ACAG 53
chr-3.trna309-Ile-AAT    GGCCU-AU----UAGCUCAGCUGGUUAGAGCGUCGUGCUAAUAACGCGAAGGUC--ACAG 53
chr-4.trna178-Ile-AAT    GGCCU-AU----UAGCUCAGCUGGUUAGAGCGUCGUGCUAAUAACGCGAAGGUC--ACAG 53
chr-6.trna565-Ile-AAT    GGCCU-AU----UAGCUCAGCUGGUUAGAGCGUCGUGCUAAUAACGCGAAGGUC--ACAG 53
chr-6.trna557-Ile-AAT    GGCCU-AU----UAGCUCAGCUGGUUAGAGCGUCGUGCUAAUAACGCGAAGGUC--ACAG 53
chr-6.trna549-Ile-AAT    GGCCU-AU----UAGCUCAGCUGGUUAGAGCGUCGUGCUAAUAACGCGAAGGUC--ACAG 53
chr-4.trna229-Ile-AAT    GGCCU-AU----UAGCUCAGCUGGUUAGAGCGUCGUGCUAAUAACGCGAAGGUC--ACAG 53
chr-6.trna529-Ile-AAT    GGCCU-AU----UAGCUCAGCUGGUUAGAGCGUCGUGCUAAUAACGCGAAGGUC--ACAG 53
chr-4.trna284-Ile-AAT    GGCCU-AU----UAGCUCAGCUGGUUAGAGCGUCGUGCUAAUAACGCGAAGGUC--ACAG 53
chr-5.trna379-Ile-AAT    GGCCU-AU----UAGCUCAGCUGGUUAGAGCGUCGUGCUAAUAACGCGAAGGUC--ACAG 53
chr-5.trna507-Ile-AAT    GGCCU-AU----UAGCUCAGCUGGUUAGAGCGUCGUGCUAAUAACGCGAAGGUC--ACAG 53
chr-6.trna471-Ile-AAT    GGCCU-AU----UAGCUCAGCUGGUUAGAGCGUCGUGCUAAUAACGCGAAGGUC--ACAG 53
chr-5.trna531-Ile-AAT    GGCCU-AU----UAGCUCAGCUGGUUAGAGCGUCGUGCUAAUAACGCGAAGGUC--ACAG 53
chr-5.trna540-Ile-AAT    GGCCU-AU----UAGCUCAGCUGGUUAGAGCGUCGUGCUAAUAACGCGAAGGUC--ACAG 53
chr-5.trna551-Ile-AAT    GGCCU-AU----UAGCUCAGCUGGUUAGAGCGUCGUGCUAAUAACGCGAAGGUC--ACAG 53
chr-5.trna580-Ile-AAT    GGCCU-AU----UAGCUCAGCUGGUUAGAGCGUCGUGCUAAUAACGCGAAGGUC--ACAG 53
chr-6.trna271-Ile-AAT    GGCCU-AU----UAGCUCAGCUGGUUAGAGCGUCGUGCUAAUAACGCGAAGGUC--ACAG 53
chr-6.trna454-Ile-AAT    GGCCU-AU----UAGCUCAGCUGGUUAGAGCGUCGUGCUAAUAACGCGAAGGUC--ACAG 53
chr-6.trna434-Ile-AAT    GGCCU-AU----UAGCUCAGCUGGUUAGAGCGUCGUGCUAAUAACGCGAAGGUC--ACAG 53
chr-6.trna400-Ile-AAT    GGCCU-AU----UAGCUCAGCUGGUUAGAGCGUCGUGCUAAUAACGCGAAGGUC--ACAG 53
chr-6.trna389-Ile-AAT    GGCCU-AU----UAGCUCAGCUGGUUAGAGCGUCGUGCUAAUAACGCGAAGGUC--ACAG 53
chr-4.trna589-Ile-AAT    GGCCU-AU----UAGCUCAGCUGGUUAGAGCGUCGUGCUAAUAACGCGAAGGUC--GCAG 53
chr-5.trna365-Ile-AAT    GGCCC-AU----UAGCUCAGUUGGUUAGAGCGUGGUGCUAAUAACGCCAAGGUC--GCAG 53
chr-5.trna340-Ile-AAT    GGCCC-AU----UAGCUCAGUUGGUUAGAGCGUGGUGCUAAUAACGCCAAGGUC--GCAG 53
chr-5.trna521-Ile-AAT    GGCCU-AU----UAGCUCAGUUGGUUAGAGCGUCGUGCUAAUAACGCGAAGGUC--ACAG 53
chr-6.trna353-Ile-AAT    CGCCC-AU----UAGCUCAGUUGGUUAGAGCGUGGUGCUAAUAACGCCAAGGUC--GCAG 53
chr-7.trna659-Ile-AAT    GGCCU-AU----UAGCUCAGCUGGUUAGAGCGUGGUCCUAAUAAGGCCAAGGUC--GCAG 53
chr-5.trna498-Ile-AAT    GGCCU-AU----UAGCUCAGCUGGUUAGAGCGUCGUGCUAAUAACGCGAAGAUC--ACAG 53
chr-6.trna519-Ile-AAT    GGCCU-AU----UAGCUCAGCUGGUUAGAGCGUCGUGCUAAUAACGCGAAAGUC--ACAG 53
chr-2.trna439-Ile-AAT    AGCCU-AU----UAGCUCAGCUGGUUAGAGCGUCGUGCUAAUAACGCGAAGGUC--GCAG 53
chr-6.trna574-Ile-AAT    GGCCU-AU----UACCUCAGCUGGUUAGAGCGUCGUGCUAAUAACGCGAAGGUC--ACAG 53
chr-6.trna623-Ile-AAT    GGCCU-AU----UAGCUCAGCUGGUUAGAGCGUCGUGCUAAUAACGCGAAGGUC--ACAG 53
chr-7.trna660-Ile-AAT    GGCCU-AU----UAGCUCAGCUGGUCAGAGCGUGGUCCUAAUAAGGCCAAGGUC--GCAG 53
chr-5.trna460-Ile-AAT    GGCCU-AU----UAGCUCAGCUGGUUAGAGCGUCGUGCUAAUAACGCGAAGGAC--ACAG 53
chr-6.trna509-Ile-AAT    GGCCU-AU----UAGCUCAGCUGGUUAGAGCGCCGUGCUAAUAACGCGAAGGUC--ACAG 53
chr-6.trna642-Ile-AAT    GGCCU-AU----UAGCUCAGCUGGUUAGAGCGUCGUCCUAAUAACGCGAAGUUC--ACAG 53
chr-7.trna657-Ile-AAT    GGCCU-AU----UAGCUCAGUUGGUUAGAGUGUGGUCCUAAUAAGGCCAAGGUC--GCAG 53
chr-5.trna479-Ile-AAT    GGCCU-AU----UAGCUCAGCUGGUUAUAGCGUCGUGCUAAUAACGCGAAGGUC--ACAG 53
chr-1.trna365-Ile-AAT    GGCCC-AU----UAGCUCAGCUGGUUAGAGGGUCGUGCUAAUAACGCCAAGGUC--GCAG 53
chr-6.trna491-Ile-AAT    UGCCU-AU----UAGCUCAGCUGGUUAGAGCGUCGUGCUAAUAACGCGAAGGUC--ACAG 53
chr-5.trna374-Ile-AAT    CGCCU-AU----UAGCUCAGCUGGUUAGAGCGUGGUCCUAAUAAGGCCAAGGUC--GCAG 53
chr-3.trna557-Ile-AAT    GGCCU-AU----UAGCUCGGCUGGUUAGAGCGUCUUGCUAAUAACGCGAAGGUC--GCAG 53
chr-6.trna591-Ile-AAT    GGCCU-AU----UAGCUCAGCUGGUUAGAGCGUUUUGCUAAUAACGCUAAGGUC--ACAG 53
chr-4.trna641-Ile-AAT    GGCCU-AU----UAGCUCAGUUGGUUAGAGCGUCCUGCUAAUAACGCGAAUGUU--GCAG 53
chr-4.trna590-Ile-AAT    GGGCU-AU----UAGCCCAGGUGGUUAGAGCGUCGUGCUAAUAACGCGAAGGUU--GCAG 53
chr-3.trna13-Ile-AAT     GGCCU-GU----UAGCUCAGUUGGUUAGAGCGUCAUGCUAAUAAUGCGAAGGUC--GCAG 53
chr-6.trna540-Ile-AAT    GGCCU-AU----UAGCUAAGCUGGUUAGAGCGUCAUGCUAAUAACGCGAAGGUC--ACAG 53
chr-8.trna248-Ile-AAT    GGCCU-AU----UAGCUCAGCUGGUUAGAGCGUGGUCCUAAUAAGGCCAAGGUC--G-AG 52
chr-5.trna368-Ile-AAT    GGUCC-UG----UAGCUCAGUUGGUUAGAGUGUUGGUCUAAUAUGCCAAAGGUC--AUGG 53
chr-2.trna455-Ile-AAT    GGCCU-AU----UUGCUCAACUUGUUAGAGCGUUGUGCUAAUAACGCGAAGGUC--GAAG 53
chr-8.trna246-Ile-AAT    GGCCU-AU----UAGCUCAGCCGGUUAGAGCGUGGUCCUAAUAAGGCCAAGGGUCAGCAG 55
chr-8.trna247-Ile-AAT    GGCCU-AU----UAGCUCAGCUGGUUAGAGCAUGGUCCUAAUAAGGCCAAGGUC-----G 50
chr-7.trna658-Ile-AAT    AGUUG-GCCUAUUAGCUCAGUUGGUUAGAGCGUGGUCCUAAUAAGGCCAAGGUC--GCAG 57
chr-8.trna153-Ile-AAT    GUUUGGGUUCCUUUGCUCGGCUGGUUAGAGUAUCCGUCUAAUAAACGGAAGGUC--AUGG 58
chr-6.trna649-Ile-AAT    GAGGCCUA---UUAGCACAGCUGGUUAGAGCGUUGUGCUAAUAACGCGAAGGUCACAGCU 57
chr-3.trna503-Ile-AAT    GGGGA-UG----UAGCUCAAUUGGU-AGGGUG-CUAAUCAAUGA-AUAGAGGCA--UGGG 50
chr-6.trna340-Ile-AAT    AAAAUAG-----UAACGGAAAAUAGUAACGCGUGGUGCUAAUAACGCCAAGGUC--GCAG 53
                                 .........10.........20.........30.........40.........50.........
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                                 (((...)).)..).)))))).....)))))).
chr-9.trna505-Ile-AAT    GUUCGAGA-C--C-UUCAU-----GGGCCA 74
chr-5.trna396-Ile-AAT    GUUCGUGA-C--C-UGUAU-----GAGCCA 74
chr-10.trna164-Ile-AAT   GUUCGAGA-C--C-UGUAU-----GGGCCA 74
chr-1.trna212-Ile-AAT    GUUCGAGA-C--C-UGCAU-----GGGCCA 74
chr-2.trna407-Ile-AAT    GUUCGAGA-C--C-UGCAU-----GGGCCA 74
chr-1.trna214-Ile-AAT    GUUCGAGA-C--C-UGCAU-----GGGCCA 74
chr-1.trna347-Ile-AAT    GUUCGAGA-C--C-UGCAU-----GGGCCA 74
chr-1.trna350-Ile-AAT    GUUCGAGA-C--C-UGCAU-----GGGCCA 74
chr-10.trna466-Ile-AAT   GUUCGAGA-C--C-UGCAU-----GGGCCA 74
chr-2.trna386-Ile-AAT    GUUCGAGA-C--C-UGCAU-----GGGCCA 74
chr-10.trna133-Ile-AAT   GUUCGAGA-C--C-UGCAU-----GGGCCA 74
chr-2.trna435-Ile-AAT    GUUCGAGA-C--C-UGCAU-----GGGCCA 74
chr-2.trna437-Ile-AAT    GUUCGAGA-C--C-UGCAU-----GGGCCA 74
chr-9.trna184-Ile-AAT    GUUCGAGA-C--C-UGCAU-----GGGCCA 74
chr-5.trna290-Ile-AAT    GUUCGAGA-C--C-UGCAU-----GGGCCA 74
chr-5.trna385-Ile-AAT    GUUCGAGA-C--C-UGCAU-----GGGCCA 74
chr-6.trna235-Ile-AAT    GUUCGAGA-C--C-UGCAU-----GGGCCA 74
chr-6.trna421-Ile-AAT    GUUCGAGA-C--C-UGCAU-----GGGCCA 74
chr-14.trna76-Ile-AAT    GUUCGAGA-C--C-UGUAU-----GGGCCA 74
chr-1.trna279-Ile-AAT    GUUCGAGA-C--C-UGUAU-----GGGCCA 74
chr-13.trna91-Ile-AAT    GUUCGAGA-C--C-UGUAU-----GGGCCA 74
chr-2.trna293-Ile-AAT    GUUCGAGA-C--C-UGUAU-----GGGCCA 74
chr-6.trna701-Ile-AAT    GUUCGAGA-C--C-UGUAU-----GGGCCA 74
chr-9.trna213-Ile-AAT    GUUCGAGA-C--C-UGUAU-----GGGCCA 74
chr-3.trna147-Ile-AAT    GUUCGAGA-C--C-UGUAU-----GGGCCA 74
chr-3.trna185-Ile-AAT    GUUCGAGA-C--C-UGUAU-----GGGCCA 74
chr-6.trna618-Ile-AAT    GUUCGAGA-C--C-UGUAU-----GGGCCA 74
chr-3.trna309-Ile-AAT    GUUCGAGA-C--C-UGUAU-----GGGCCA 74
chr-4.trna178-Ile-AAT    GUUCGAGA-C--C-UGUAU-----GGGCCA 74
chr-6.trna565-Ile-AAT    GUUCGAGA-C--C-UGUAU-----GGGCCA 74
chr-6.trna557-Ile-AAT    GUUCGAGA-C--C-UGUAU-----GGGCCA 74
chr-6.trna549-Ile-AAT    GUUCGAGA-C--C-UGUAU-----GGGCCA 74
chr-4.trna229-Ile-AAT    GUUCGAGA-C--C-UGUAU-----GGGCCA 74
chr-6.trna529-Ile-AAT    GUUCGAGA-C--C-UGUAU-----GGGCCA 74
chr-4.trna284-Ile-AAT    GUUCGAGA-C--C-UGUAU-----GGGCCA 74
chr-5.trna379-Ile-AAT    GUUCGAGA-C--C-UGUAU-----GGGCCA 74
chr-5.trna507-Ile-AAT    GUUCGAGA-C--C-UGUAU-----GGGCCA 74
chr-6.trna471-Ile-AAT    GUUCGAGA-C--C-UGUAU-----GGGCCA 74
chr-5.trna531-Ile-AAT    GUUCGAGA-C--C-UGUAU-----GGGCCA 74
chr-5.trna540-Ile-AAT    GUUCGAGA-C--C-UGUAU-----GGGCCA 74
chr-5.trna551-Ile-AAT    GUUCGAGA-C--C-UGUAU-----GGGCCA 74
chr-5.trna580-Ile-AAT    GUUCGAGA-C--C-UGUAU-----GGGCCA 74
chr-6.trna271-Ile-AAT    GUUCGAGA-C--C-UGUAU-----GGGCCA 74
chr-6.trna454-Ile-AAT    GUUGGAGA-C--C-UGUAU-----GGGCCA 74
chr-6.trna434-Ile-AAT    GUUGGAGA-C--C-UGUAU-----GGGCCA 74
chr-6.trna400-Ile-AAT    GUUGGAGA-C--C-UGUAU-----GGGCCA 74
chr-6.trna389-Ile-AAT    GUUGGAGA-C--C-UGUAU-----GGGCCA 74
chr-4.trna589-Ile-AAT    GUUCGAGA-C--C-UGCAA-----GGGCCA 74
chr-5.trna365-Ile-AAT    GUUCGGGA-C--C-UGCAU-----GGGCCA 74
chr-5.trna340-Ile-AAT    GUUCGAGA-C--C-UGCAU-----GGGCCU 74
chr-5.trna521-Ile-AAT    GUUCGAGA-C--C-UGUAU-----GGGCCA 74
chr-6.trna353-Ile-AAT    GUUCGAGA-C--C-UGCAU-----GGGCCA 74
chr-7.trna659-Ile-AAT    GUUCGAGA-C--C-UGCAU-----GGGCCA 74
chr-5.trna498-Ile-AAT    GUUCGAGA-C--C-UGUAU-----GGGCCA 74
chr-6.trna519-Ile-AAT    GUUCGAGA-C--C-UGUAU-----GGGCCA 74
chr-2.trna439-Ile-AAT    GUUCGAGA-C--C-UGCAU-----GGGCCA 74
chr-6.trna574-Ile-AAT    GUUCGAGA-C--C-UGUAU-----GGGCCA 74
chr-6.trna623-Ile-AAT    GUUCGAGA-C--C-UGUAU-----UGGCCA 74
chr-7.trna660-Ile-AAT    GUUCGAGA-C--C-UGCAU-----GGGCCA 74
chr-5.trna460-Ile-AAT    GUUCGAGA-C--C-UGUAU-----GGGCCA 74
chr-6.trna509-Ile-AAT    GUUCGAGA-C--C-UGUAU-----GGGCCA 74
chr-6.trna642-Ile-AAT    GUUUGAAA-C--C-UGUAU-----GGGCCA 74
chr-7.trna657-Ile-AAT    GUUGAAGA-C--C-UGCAU-----GGGCCA 74
chr-5.trna479-Ile-AAT    GUUCAAGA-C--C-UGUAU-----GGGCCA 74
chr-1.trna365-Ile-AAT    GUUCGAGA-C--C-UGCAU-----GGGCCA 74
chr-6.trna491-Ile-AAT    GUUCUAGA-C--C-UGUAU-----GGGCCA 74
chr-5.trna374-Ile-AAT    GUUCGAGA-C--U-UGCAU-----GGGCCA 74
chr-3.trna557-Ile-AAT    GUUCGAGA-C--C-UGCAU-----GGGCCA 74
chr-6.trna591-Ile-AAT    GUUCGAGA-C--C-UGUAU-----GGGCCA 74
chr-4.trna641-Ile-AAT    GUUCGAGA-C--C-UGCAU-----GGGCCA 74
chr-4.trna590-Ile-AAT    GUUUGAGA-C--C-UGCAU-----GGGCCA 74
chr-3.trna13-Ile-AAT     GUUCGAGA-C--C-UGCAU-----GGUCCA 74
chr-6.trna540-Ile-AAT    GUUCGAGA-C--C-UGUAU-----GGACUA 74
chr-8.trna248-Ile-AAT    GUUCGAGA-C--C-UGCAU-----GGGCCA 73
chr-5.trna368-Ile-AAT    GUUUCAAGCC--C-CGUCG-----GGACCA 75
chr-2.trna455-Ile-AAT    GUUCGAGA-C--C-UGCAU-----GGGCCA 74
chr-8.trna246-Ile-AAT    GUUCGAGA-C--C-UGCAU-----GGGCCA 76
chr-8.trna247-Ile-AAT    CUUUGAGA-C--C-UGCAU-----CGGCCA 71
chr-7.trna658-Ile-AAT    GUUGAAGA-C--C-UGGGC-----CAACCU 78
chr-8.trna153-Ile-AAT    GUUCAAUC-C--C-CAUCA-----CAAACC 79
chr-6.trna649-Ile-AAT    UCUAGAGUGG--ACUGUAC--ACGGUUUCA 83
chr-3.trna503-Ile-AAT    GUUUGAU--U--CCUCGCA-----UCUCCA 71
chr-6.trna340-Ile-AAT    GUUCGAGACCUGCAUGGGCCACUUAUUUUU 83
                         .........70.........80.........
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