int n = 29;

double[][] distanceMatrix = new double[n][n];

for (double[] row : distanceMatrix) java.util.Arrays.fill(row, 10000);

//distanceMatrix[1][1] = distanceMatrix[1][1] = 0;

distanceMatrix[1][2] = distanceMatrix[2][1] = 107;

distanceMatrix[1][3] = distanceMatrix[3][1] = 241;

distanceMatrix[1][4] = distanceMatrix[4][1] = 190;

distanceMatrix[1][5] = distanceMatrix[5][1] = 124 ;

distanceMatrix[1][6] = distanceMatrix[6][1] = 80 ;

distanceMatrix[1][7] = distanceMatrix[7][1] = 316;

distanceMatrix[1][8] = distanceMatrix[8][1] = 76;

distanceMatrix[1][9] = distanceMatrix[9][1] = 152;

distanceMatrix[1][10] = distanceMatrix[10][1] = 157;

distanceMatrix[1][11] = distanceMatrix[11][1] = 283;

distanceMatrix[1][12] = distanceMatrix[12][1] = 133;

distanceMatrix[1][13] = distanceMatrix[13][1] = 113;

distanceMatrix[1][14] = distanceMatrix[14][1] = 297;

distanceMatrix[1][15] = distanceMatrix[15][1] = 228;

distanceMatrix[1][16] = distanceMatrix[16][1] = 129;

distanceMatrix[1][17] = distanceMatrix[17][1] = 348;

distanceMatrix[1][18] = distanceMatrix[18][1] = 276;

distanceMatrix[1][19] = distanceMatrix[19][1] = 188 ;

distanceMatrix[1][20] = distanceMatrix[20][1] = 150;

distanceMatrix[1][21] = distanceMatrix[21][1] = 65;

distanceMatrix[1][22] = distanceMatrix[22][1] = 341;

distanceMatrix[1][23] = distanceMatrix[23][1] = 184;

distanceMatrix[1][24] = distanceMatrix[24][1] = 67;

distanceMatrix[1][25] = distanceMatrix[25][1] = 221;

distanceMatrix[1][26] = distanceMatrix[26][1] = 169;

distanceMatrix[1][27] = distanceMatrix[27][1] = 108;

distanceMatrix[1][28] = distanceMatrix[28][1] = 45;

distanceMatrix[1][29] = distanceMatrix[29][1] = 167;

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//distanceMatrix[2][1] = distanceMatrix[1][2] = 107;

//distanceMatrix[2][2] = distanceMatrix[2][2] = 0 ;

distanceMatrix[2][3] = distanceMatrix[3][2] = 148;

distanceMatrix[2][4] = distanceMatrix[4][2] = 137;

distanceMatrix[2][5] = distanceMatrix[5][2] = 88;

distanceMatrix[2][6] = distanceMatrix[6][2] = 127;

distanceMatrix[2][7] = distanceMatrix[7][2] = 336;

distanceMatrix[2][8] = distanceMatrix[8][2] = 183;

distanceMatrix[2][9] = distanceMatrix[9][2] = 134;

distanceMatrix[2][10] = distanceMatrix[10][2] = 95;

distanceMatrix[2][11] = distanceMatrix[11][2] = 254;

distanceMatrix[2][12] = distanceMatrix[12][2] = 180;

distanceMatrix[2][13] = distanceMatrix[13][2] = 101;

distanceMatrix[2][14] = distanceMatrix[14][2] = 234;

distanceMatrix[2][15] = distanceMatrix[15][2] = 175;

distanceMatrix[2][16] = distanceMatrix[16][2] = 176;

distanceMatrix[2][17] = distanceMatrix[17][2] = 265;

distanceMatrix[2][18] = distanceMatrix[18][2] = 199;

distanceMatrix[2][19] = distanceMatrix[19][2] = 182;

distanceMatrix[2][20] = distanceMatrix[20][2] = 67;

distanceMatrix[2][21] = distanceMatrix[21][4] = 42;

distanceMatrix[2][22] = distanceMatrix[22][2] = 278;

distanceMatrix[2][23] = distanceMatrix[23][2] = 271;

distanceMatrix[2][24] = distanceMatrix[24][2] = 146;

distanceMatrix[2][25] = distanceMatrix[25][2] = 251;

distanceMatrix[2][26] = distanceMatrix[26][2] = 105;

distanceMatrix[2][27] = distanceMatrix[27][2] = 191;

distanceMatrix[2][28] = distanceMatrix[28][2] = 139;

distanceMatrix[2][29] = distanceMatrix[29][2] = 79;

////////////////

//distanceMatrix[3][1] = distanceMatrix[3][3] = 241;

//distanceMatrix[3][2] = distanceMatrix[3][3] = 148;

//distanceMatrix[3][3] = distanceMatrix[3][3] = 0;

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distanceMatrix[3][5] = distanceMatrix[5][3] = 171;

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distanceMatrix[3][8] = distanceMatrix[8][3] = 317;

distanceMatrix[3][9] = distanceMatrix[9][3] = 217;

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distanceMatrix[3][11] = distanceMatrix[11][3] = 491;

distanceMatrix[3][12] = distanceMatrix[12][3] = 312;

distanceMatrix[3][13] = distanceMatrix[13][3] = 280;

distanceMatrix[3][14] = distanceMatrix[14][3] = 391;

distanceMatrix[3][15] = distanceMatrix[15][3] = 412;

distanceMatrix[3][16] = distanceMatrix[16][3] = 349;

distanceMatrix[3][17] = distanceMatrix[17][3] = 422;

distanceMatrix[3][18] = distanceMatrix[18][3] = 356;

distanceMatrix[3][19] = distanceMatrix[19][3] = 355;

distanceMatrix[3][20] = distanceMatrix[20][3] = 204;

distanceMatrix[3][21] = distanceMatrix[21][3] = 182;

distanceMatrix[3][22] = distanceMatrix[22][3] = 435;

distanceMatrix[3][23] = distanceMatrix[23][3] = 417;

distanceMatrix[3][24] = distanceMatrix[24][3] = 292;

distanceMatrix[3][25] = distanceMatrix[25][3] = 424;

distanceMatrix[3][26] = distanceMatrix[26][3] = 116;

distanceMatrix[3][27] = distanceMatrix[27][3] = 337;

distanceMatrix[3][28] = distanceMatrix[28][3] = 273;

distanceMatrix[3][29] = distanceMatrix[29][3] = 77;

////// /////

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distanceMatrix[4][7] = distanceMatrix[7][4] = 222;

distanceMatrix[4][8] = distanceMatrix[8][4] = 192;

distanceMatrix[4][9] = distanceMatrix[9][4] = 248;

distanceMatrix[4][10] = distanceMatrix[10][4] = 42;

distanceMatrix[4][11] = distanceMatrix[11][4] = 117;

distanceMatrix[4][12] = distanceMatrix[12][4] = 287;

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distanceMatrix[4][16] = distanceMatrix[16][4] = 121;

distanceMatrix[4][17] = distanceMatrix[17][4] = 152;

distanceMatrix[4][18] = distanceMatrix[18][4] = 86;

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distanceMatrix[4][22] = distanceMatrix[22][4] = 151;

distanceMatrix[4][23] = distanceMatrix[23][4] = 239;

distanceMatrix[4][24] = distanceMatrix[24][4] = 135;

distanceMatrix[4][25] = distanceMatrix[25][4] = 137;

distanceMatrix[4][26] = distanceMatrix[26][4] = 242;

distanceMatrix[4][27] = distanceMatrix[27][4] = 165;

distanceMatrix[4][28] = distanceMatrix[28][4] = 228;

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distanceMatrix[5][9] = distanceMatrix[9][5] = 46;

distanceMatrix[5][10] = distanceMatrix[10][5] = 160;

distanceMatrix[5][11] = distanceMatrix[11][5] = 319;

distanceMatrix[5][12] = distanceMatrix[12][5] = 112;

distanceMatrix[5][13] = distanceMatrix[13][5] = 163;

distanceMatrix[5][14] = distanceMatrix[14][5] = 322;

distanceMatrix[5][15] = distanceMatrix[15][5] = 240;

distanceMatrix[5][16] = distanceMatrix[16][5] = 232;

distanceMatrix[5][17] = distanceMatrix[17][5] = 314;

distanceMatrix[5][18] = distanceMatrix[18][5] = 287;

distanceMatrix[5][19] = distanceMatrix[19][5] = 238;

distanceMatrix[5][20] = distanceMatrix[20][5] = 155;

distanceMatrix[5][21] = distanceMatrix[21][5] = 65;

distanceMatrix[5][22] = distanceMatrix[22][5] = 366;

distanceMatrix[5][23] = distanceMatrix[23][5] = 300;

distanceMatrix[5][24] = distanceMatrix[24][5] = 175;

distanceMatrix[5][25] = distanceMatrix[25][5] = 307;

distanceMatrix[5][26] = distanceMatrix[26][5] = 57;

distanceMatrix[5][27] = distanceMatrix[27][5] = 220;

distanceMatrix[5][28] = distanceMatrix[28][5] = 121;

distanceMatrix[5][29] = distanceMatrix[29][5] = 97;

/////////////////////

distanceMatrix[6][7] = distanceMatrix[7][6] = 386;

distanceMatrix[6][8] = distanceMatrix[8][6] = 141;

distanceMatrix[6][9] = distanceMatrix[9][6] = 72;

distanceMatrix[6][10] = distanceMatrix[10][6] = 167;

distanceMatrix[6][11] = distanceMatrix[11][6] = 351;

distanceMatrix[6][12] = distanceMatrix[12][6] = 55;

distanceMatrix[6][13] = distanceMatrix[13][6] = 157;

distanceMatrix[6][14] = distanceMatrix[14][6] = 331;

distanceMatrix[6][15] = distanceMatrix[15][6] = 272;

distanceMatrix[6][16] = distanceMatrix[16][6] = 226;

distanceMatrix[6][17] = distanceMatrix[17][6] = 362;

distanceMatrix[6][18] = distanceMatrix[18][6] = 296;

distanceMatrix[6][19] = distanceMatrix[19][6] = 232;

distanceMatrix[6][20] = distanceMatrix[20][6] = 164;

distanceMatrix[6][21] = distanceMatrix[21][6] = 85;

distanceMatrix[6][22] = distanceMatrix[22][6] = 375;

distanceMatrix[6][23] = distanceMatrix[23][6] = 249;

distanceMatrix[6][24] = distanceMatrix[24][6] = 147;

distanceMatrix[6][25] = distanceMatrix[25][6] = 301;

distanceMatrix[6][26] = distanceMatrix[26][6] = 118;

distanceMatrix[6][27] = distanceMatrix[27][6] = 188;

distanceMatrix[6][28] = distanceMatrix[28][6] = 60;

distanceMatrix[6][29] = distanceMatrix[29][6] = 185;

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distanceMatrix[7][8] = distanceMatrix[8][7] = 233;

distanceMatrix[7][9] = distanceMatrix[9][7] = 438;

distanceMatrix[7][10] = distanceMatrix[10][7] = 254;

distanceMatrix[7][11] = distanceMatrix[11][7] = 202;

distanceMatrix[7][12] = distanceMatrix[12][7] = 439;

distanceMatrix[7][13] = distanceMatrix[13][7] = 235;

distanceMatrix[7][14] = distanceMatrix[14][7] = 254;

distanceMatrix[7][15] = distanceMatrix[15][7] = 210;

distanceMatrix[7][16] = distanceMatrix[16][7] = 187;

distanceMatrix[7][17] = distanceMatrix[17][7] = 313;

distanceMatrix[7][18] = distanceMatrix[18][7] = 266;

distanceMatrix[7][19] = distanceMatrix[19][7] = 154;

distanceMatrix[7][20] = distanceMatrix[20][7] = 282;

distanceMatrix[7][21] = distanceMatrix[21][7] = 321;

distanceMatrix[7][22] = distanceMatrix[22][7] = 298;

distanceMatrix[7][23] = distanceMatrix[23][7] = 168;

distanceMatrix[7][24] = distanceMatrix[24][7] = 249;

distanceMatrix[7][25] = distanceMatrix[25][7] = 95;

distanceMatrix[7][26] = distanceMatrix[26][7] = 437;

distanceMatrix[7][27] = distanceMatrix[27][7] = 190;

distanceMatrix[7][28] = distanceMatrix[28][7] =314;

distanceMatrix[7][29] = distanceMatrix[29][7] = 435;

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distanceMatrix[8][9] = distanceMatrix[9][8] = 213;

distanceMatrix[8][10] = distanceMatrix[10][8] = 188;

distanceMatrix[8][11] = distanceMatrix[11][8] = 272;

distanceMatrix[8][12] = distanceMatrix[12][8] = 193;

distanceMatrix[8][13] = distanceMatrix[13][8] = 131;

distanceMatrix[8][14] = distanceMatrix[14][8] = 302;

distanceMatrix[8][15] = distanceMatrix[15][8] = 233;

distanceMatrix[8][16] = distanceMatrix[16][8] = 98;

distanceMatrix[8][17] = distanceMatrix[17][8] = 344;

distanceMatrix[8][18] = distanceMatrix[18][8] = 289;

distanceMatrix[8][19] = distanceMatrix[19][8] = 177;

distanceMatrix[8][20] = distanceMatrix[20][8] = 216;

distanceMatrix[8][21] = distanceMatrix[21][8] = 141;

distanceMatrix[8][22] = distanceMatrix[22][8] = 346;

distanceMatrix[8][23] = distanceMatrix[23][8] = 108;

distanceMatrix[8][24] = distanceMatrix[24][8] = 57;

distanceMatrix[8][25] = distanceMatrix[25][8] = 190;

distanceMatrix[8][26] = distanceMatrix[26][8] = 245;

distanceMatrix[8][27] = distanceMatrix[27][8] =43 ;

distanceMatrix[8][28] = distanceMatrix[28][8] =81;

distanceMatrix[8][29] = distanceMatrix[29][8] = 243;

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distanceMatrix[9][10] = distanceMatrix[10][9] = 206;

distanceMatrix[9][11] = distanceMatrix[11][9] = 365;

distanceMatrix[9][12] = distanceMatrix[12][9] = 89;

distanceMatrix[9][13] = distanceMatrix[13][9] = 209;

distanceMatrix[9][14] = distanceMatrix[14][9] = 368;

distanceMatrix[9][15] = distanceMatrix[15][9] = 286;

distanceMatrix[9][16] = distanceMatrix[16][9] = 278;

distanceMatrix[9][17] = distanceMatrix[17][9] = 360;

distanceMatrix[9][18] = distanceMatrix[18][9] = 333;

distanceMatrix[9][19] = distanceMatrix[19][9] = 284;

distanceMatrix[9][20] = distanceMatrix[20][9] = 201;

distanceMatrix[9][21] = distanceMatrix[21][9] = 111;

distanceMatrix[9][22] = distanceMatrix[22][9] = 412;

distanceMatrix[9][23] = distanceMatrix[23][9] = 321;

distanceMatrix[9][24] = distanceMatrix[24][9] = 221;

distanceMatrix[9][25] = distanceMatrix[25][9] = 353;

distanceMatrix[9][26] = distanceMatrix[26][9] = 72;

distanceMatrix[9][27] = distanceMatrix[27][9] = 266;

distanceMatrix[9][28] = distanceMatrix[28][9] =132;

distanceMatrix[9][29] = distanceMatrix[29][9] = 111;

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distanceMatrix[10][11] = distanceMatrix[11][ 10] = 159;

distanceMatrix[10][12] = distanceMatrix[12][ 10] = 220;

distanceMatrix[10][13] = distanceMatrix[13][ 10] = 57;

distanceMatrix[10][14] = distanceMatrix[14][ 10] = 149;

distanceMatrix[10][15] = distanceMatrix[15][ 10] = 80;

distanceMatrix[10][16] = distanceMatrix[16][ 10] = 132;

distanceMatrix[10][17] = distanceMatrix[17][ 10] = 193;

distanceMatrix[10][18] = distanceMatrix[18][ 10] = 127;

distanceMatrix[10][19] = distanceMatrix[19][ 10] = 100;

distanceMatrix[10][20] = distanceMatrix[20][ 10] = 28;

distanceMatrix[10][21] = distanceMatrix[21][ 10] = 95;

distanceMatrix[10][22] = distanceMatrix[22][ 10] = 193;

distanceMatrix[10][23] = distanceMatrix[23][ 10] = 241;

distanceMatrix[10][24] = distanceMatrix[24][ 10] = 131;

distanceMatrix[10][25] = distanceMatrix[25][ 10] = 169;

distanceMatrix[10][26] = distanceMatrix[26][ 10] = 200;

distanceMatrix[10][27] = distanceMatrix[27][ 10] = 161;

distanceMatrix[10][28] = distanceMatrix[28][ 10] =189;

distanceMatrix[10][29] = distanceMatrix[29][ 10] = 163;

////// /////

distanceMatrix[11][12] = distanceMatrix[12][ 11] = 404;

distanceMatrix[11][13] = distanceMatrix[13][ 11] = 176;

distanceMatrix[11][14] = distanceMatrix[14][ 11] = 106;

distanceMatrix[11][15] = distanceMatrix[15][ 11] = 79;

distanceMatrix[11][16] = distanceMatrix[16][ 11] = 161;

distanceMatrix[11][17] = distanceMatrix[17][ 11] = 165;

distanceMatrix[11][18] = distanceMatrix[18][ 11] = 141;

distanceMatrix[11][19] = distanceMatrix[19][ 11] = 95;

distanceMatrix[11][20] = distanceMatrix[20][ 11] = 187;

distanceMatrix[11][21] = distanceMatrix[21][ 11] = 254;

distanceMatrix[11][22] = distanceMatrix[22][ 11] = 103;

distanceMatrix[11][23] = distanceMatrix[23][ 11] = 279;

distanceMatrix[11][24] = distanceMatrix[24][ 11] = 215;

distanceMatrix[11][25] = distanceMatrix[25][ 11] = 117;

distanceMatrix[11][26] = distanceMatrix[26][ 11] = 359;

distanceMatrix[11][27] = distanceMatrix[27][ 11] = 216;

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distanceMatrix[11][29] = distanceMatrix[29][ 11] = 322;

////////////////////

distanceMatrix[12][13] = distanceMatrix[13][ 12] = 210;

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distanceMatrix[12][17] = distanceMatrix[17][ 12] = 415;

distanceMatrix[12][18] = distanceMatrix[18][ 12] = 349;

distanceMatrix[12][19] = distanceMatrix[19][ 12] = 285;

distanceMatrix[12][20] = distanceMatrix[20][ 12] = 217;

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distanceMatrix[12][22] = distanceMatrix[22][ 12] = 428;

distanceMatrix[12][23] = distanceMatrix[23][ 12] = 310;

distanceMatrix[12][24] = distanceMatrix[24][ 12] = 200;

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distanceMatrix[13][20] = distanceMatrix[20][ 13] = 85;

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distanceMatrix[13][25] = distanceMatrix[25][ 13] = 150;

distanceMatrix[13][26] = distanceMatrix[26][ 13] = 208;

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distanceMatrix[14][25] = distanceMatrix[25][ 14] = 169;

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distanceMatrix[14][27] = distanceMatrix[27][ 14] = 246;

distanceMatrix[14][28] = distanceMatrix[28][ 14] =335;

distanceMatrix[14][29] = distanceMatrix[29][ 14] = 288;

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distanceMatrix[15][21] = distanceMatrix[21][ 15] = 175;

distanceMatrix[15][22] = distanceMatrix[22][ 15] = 113;

distanceMatrix[15][23] = distanceMatrix[23][ 15] = 240;

distanceMatrix[15][24] = distanceMatrix[24][ 15] = 176;

distanceMatrix[15][25] = distanceMatrix[25][ 15] = 125;

distanceMatrix[15][26] = distanceMatrix[26][ 15] = 280;

distanceMatrix[15][27] = distanceMatrix[27][ 15] = 177;

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distanceMatrix[15][29] = distanceMatrix[29][ 15] = 243;

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distanceMatrix[16][17] = distanceMatrix[17][ 16] = 244;

distanceMatrix[16][18] = distanceMatrix[18][ 16] = 178;

distanceMatrix[16][19] = distanceMatrix[19][ 16] = 66;

distanceMatrix[16][20] = distanceMatrix[20][ 16] = 160;

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distanceMatrix[16][23] = distanceMatrix[23][ 16] = 118;

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distanceMatrix[17][24] = distanceMatrix[24][ 17] = 287;

distanceMatrix[17][25] = distanceMatrix[25][ 17] = 228;

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distanceMatrix[17][29] = distanceMatrix[29][ 17] = 319;

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///////////////88 211 269 159 197 172 189 182 135

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distanceMatrix[20][22] = distanceMatrix[22][ 20] = 211;

distanceMatrix[20][23] = distanceMatrix[23][ 20] = 269;

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distanceMatrix[23][28] = distanceMatrix[28][ 23] =189;

distanceMatrix[23][29] = distanceMatrix[29][ 23] = 342;

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distanceMatrix[24][25] = distanceMatrix[25][ 24] = 154;

distanceMatrix[24][26] = distanceMatrix[26][ 24] = 220;

distanceMatrix[24][27] = distanceMatrix[27][ 24] = 41;

distanceMatrix[24][28] = distanceMatrix[28][ 24] =93;

distanceMatrix[24][29] = distanceMatrix[29][ 24] = 218;

//////////////////

distanceMatrix[25][26] = distanceMatrix[26][ 25] = 352;

distanceMatrix[25][27] = distanceMatrix[27][ 25] = 147;

distanceMatrix[25][28] = distanceMatrix[28][ 25] =247;

distanceMatrix[25][29] = distanceMatrix[29][ 25] = 350;

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distanceMatrix[26][27] = distanceMatrix[27][ 26] = 265;

distanceMatrix[26][28] = distanceMatrix[28][ 26] =178;

distanceMatrix[26][29] = distanceMatrix[29][ 26] = 39;

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distanceMatrix[27][28] = distanceMatrix[28][ 27] =124;

distanceMatrix[27][29] = distanceMatrix[29][ 27] = 263;

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distanceMatrix[28][29] = distanceMatrix[29][ 28] = 199;