EXAMPLE 1

A = [ 579 0 0 0 0 0 691 0 0 0 0 0; 0 579 0 0 0 0 0 691 0 0 0 0;

0 0 579 0 0 0 0 0 691 0 0 0; 0 0 0 930 0 0 0 0 0 9 14 0 0;

0 0 0 0 930 0 0 0 0 0 914 0; 0 0 0 0 0 930 0 0 0 0 0 914;

1 0 0 1 0 0 0 0 0 0 0 0; 0 1 0 0 1 0 0 0 0 0 0 0;

0 0 1 0 0 1 0 0 0 0 0 0; 0 0 0 0 0 0 1 0 0 1 0 0; 0 0 0 0 0 0 0 1 0 0 1 0;

0 0 0 0 0 0 0 0 1 0 0 1 ];

b = [ 39 832 421 159 63 485 996 495 404 46 657 906 ]';

c = [ 964 346 513 964 346 513 351 862 159 351 862 159 ]';

ctype = "UUUUUUUUUUUU";

vartype = "CCCCCCCCCCCC";

EXAMPLE 2

A = [ 336 0 0 0 0 0 902 0 0 0 0 0;

0 336 0 0 0 0 0 902 0 0 0 0;

0 0 539 0 0 0 0 0 39 0 0 0;

0 0 0 539 0 0 0 0 0 39 0 0;

0 0 0 0 848 0 0 0 0 0 797 0;

0 0 0 0 0 848 0 0 0 0 0 797;

1 0 1 0 1 0 0 0 0 0 0 0;

0 1 0 1 0 1 0 0 0 0 0 0;

0 0 0 0 0 0 1 0 1 0 1 0;

0 0 0 0 0 0 0 1 0 1 0 1 ];

b = [ 507 558 108 638 199 368 15 414 309 129 ]';

c = [ 664 100 664 100 664 100 25 488 25 488 25 488 ]';

ctype = "UUUUUUUUUU";

vartype = "CCCCCCCCCCCC";

EXAMPLE 3

A = [ 908 0 0 0 45 0 0 0 617 0 0 0;

0 908 0 0 0 45 0 0 0 617 0 0;

0 0 617 0 0 0 134 0 0 0 445 0;

0 0 0 617 0 0 0 1 34 0 0 0 445;

1 0 1 0 0 0 0 0 0 0 0 0;

0 1 0 1 0 0 0 0 0 0 0 0;

0 0 0 0 1 0 1 0 0 0 0 0;

0 0 0 0 0 1 0 1 0 0 0 0;

0 0 0 0 0 0 0 0 1 0 1 0;

0 0 0 0 0 0 0 0 0 1 0 1 ];

b = [ 820 59 628 288 288 817 592 905 866 152 ]';

c = [ 436 709 436 709 909 337 909 337 822 904 822 904 ]';

ctype = "UUUUUUUUUU";

vartype = "CCCCCCCCCCCC";

EXAMPLE 4

A = [ 595 0 0 0 0 0 840 0 0 0 0 0; 0 595 0 0 0 0 0 840 0 0 0 0; 0 0 595 0 0 0 0 0 840 0 0 0;

0 0 0 595 0 0 0 0 0 8 40 0 0; 0 0 0 0 595 0 0 0 0 0 840 0; 0 0 0 0 0 595 0 0 0 0 0 840;

1 0 0 0 0 0 0 0 0 0 0 0; 0 1 0 0 0 0 0 0 0 0 0 0;

0 0 1 0 0 0 0 0 0 0 0 0; 0 0 0 1 0 0 0 0 0 0 0 0;

0 0 0 0 1 0 0 0 0 0 0 0; 0 0 0 0 0 1 0 0 0 0 0 0;

0 0 0 0 0 0 1 0 0 0 0 0; 0 0 0 0 0 0 0 1 0 0 0 0;

0 0 0 0 0 0 0 0 1 0 0 0; 0 0 0 0 0 0 0 0 0 1 0 0; 0 0 0 0 0 0 0 0 0 0 1 0;

0 0 0 0 0 0 0 0 0 0 0 1 ];

b = [ 998 316 112 350 663 438 99 803 485 657 314 273 434

859 739 903 180 677 ]';

c = [ 607 101 439 203 705 921 456 107 634 185 506 524 ]';

ctype = "UUUUUUUUUUUUUUUUUU";

vartype = "CCCCCCCCCCCC";

EXAMPLE 5

A = [ 712 0 0 0 0 0 0 0 0 0 0 0; 0 712 0 0 0 0 0 0 0 0 0

0; 0 0 712 0 0 0 0 0 0 0 0 0; 0 0 0 712 0 0 0 0 0 0 0 0;

0 0 0 0 712 0 0 0 0 0 0 0; 0 0 0 0 0 712 0 0 0 0 0 0; 0 0

0 0 0 0 527 0 0 0 0 0; 0 0 0 0 0 0 0 527 0 0 0 0; 0 0 0

0 0 0 0 0 527 0 0 0; 0 0 0 0 0 0 0 0 0 527 0 0; 0 0 0 0 0

0 0 0 0 0 527 0; 0 0 0 0 0 0 0 0 0 0 0 527; 1 0 0 0 0 0

1 0 0 0 0 0; 0 1 0 0 0 0 0 1 0 0 0 0; 0 0 1 0 0 0 0 0 1 0

0 0; 0 0 0 1 0 0 0 0 0 1 0 0; 0 0 0 0 1 0 0 0 0 0 1 0; 0

0 0 0 0 1 0 0 0 0 0 1 ];

b = [ 482 377 228 442 350 29 727 401 456 440 843 481 919

915 799 375 212 827 ]';

c = [ 51 656 646 129 216 950 51 656 646 129 216 950 ]';

ctype = "UUUUUUUUUUUUUUUUUU";

vartype = "CCCCCCCCCCCC";

EXAMPLE 6

A = [ 297 0 519 0 678 0 916 0 505 0 733 0;

0 123 0 911 0 927 0 588 0 328 0 902; 1 1 0 0 0 0 0 0 0 0 0 0;

0 0 1 1 0 0 0 0 0 0 0 0; 0 0 0 0 1 1 0 0 0 0 0 0;

0 0 0 0 0 0 1 1 0 0 0 0; 0 0 0 0 0 0 0 0 1 1 0 0;

0 0 0 0 0 0 0 0 0 0 1 1];

b = [ 636 258 340 137 679 883 224 379 ]';

c = [ 68 68 787 787 704 704 278 278 913 913 186 186 ]';

ctype = "UUUUUUUU";

vartype = "CCCCCCCCCCCC";

EXAMPLE 7

A = [ 342 0 96 0 352 0 236 0 512 0 45 0;

0 342 0 96 0 352 0 236 0 512 0 45; 1 0 0 0 0 0 0 0 0 0 0 0;

0 1 0 0 0 0 0 0 0 0 0 0; 0 0 1 0 0 0 0 0 0 0 0 0; 0 0 0 1 0 0 0 0 0 0 0 0; 0 0 0 0 1 0 0 0 0 0 0 0;

0 0 0 0 0 1 0 0 0 0 0 0; 0 0 0 0 0 0 1 0 0 0 0 0; 0 0 0 0 0 0 0 1 0 0 0 0; 0 0 0 0 0 0 0 0 1 0 0 0;

0 0 0 0 0 0 0 0 0 1 0 0; 0 0 0 0 0 0 0 0 0 0 1 0; 0 0 0 0 0 0 0 0 0 0 0 1 ];

b = [ 480 687 826 613 197 117 705 693 175 389 859 364 915

850 ]';

c = [ 494 410 105 976 962 688 543 851 968 551 128 711 ]';

ctype = "UUUUUUUUUUUUUU";

vartype = "CCCCCCCCCCCC";

EXAMPLE 8

A = [ 597 0 0 0 0 0 0 0 0 0 0 0; 0 597 0 0 0 0 0 0 0 0 0 0; 0 0 202 0 0 0 0 0 0 0 0 0;

0 0 0 202 0 0 0 0 0 0 0 0; 0 0 0 0 807 0 0 0 0 0 0 0; 0 0 0 0 0 807 0 0 0 0 0 0;

0 0 0 0 0 0 615 0 0 0 0 0; 0 0 0 0 0 0 0 615 0 0 0 0; 0 0 0 0 0 0 0 0 556 0 0 0;

0 0 0 0 0 0 0 0 0 556 0 0; 0 0 0 0 0 0 0 0 0 0 307 0; 0 0 0 0 0 0 0 0 0 0 0 307;

1 0 1 0 1 0 1 0 1 0 1 0; 0 1 0 1 0 1 0 1 0 1 0 1 ];

b = [ 673 950 648 321 926 201 385 867 754 484 239 714 53

562 ]';

c = [ 782 676 782 676 782 676 782 676 782 676 782 676 ]';

ctype = "UUUUUUUUUUUUUU";

vartype = "CCCCCCCCCCCC";

EXAMPLE 9

ᄒA = [ 892 0 0 0 0 0 319 0 0 0 0 0; 0 22 0 0 0 0 0 497 0 0 0 0; 0 0 365 0 0 0 0 0 851 0 0 0;

0 0 0 154 0 0 0 0 0 75 3 0 0; 0 0 0 0 285 0 0 0 0 0 522 0; 0 0 0 0 0 513 0 0 0 0 0 938;

1 1 1 1 1 1 0 0 0 0 0 0; 0 0 0 0 0 0 1 1 1 1 1 1];

b = [ 945 486 429 866 486 743 330 213 ]';

c = [ 96 96 96 96 96 96 374 374 374 374 374 374 ]';

ctype = "UUUUUUUU";

vartype = "CCCCCCCCCCCC";

EXAMPLE 10

A = [ 469 0 0 0 697 0 0 0 612 0 0 0; 0 568 0 0 0 473 0 0 0 661 0 0; 0 0 524 0 0 0 723 0 0 0 545 0; 0 0 0 25 0 0 0 297 0 0 0 599; 1 1 1 1 0 0 0 0 0 0 0 0; 0 0 0 0 1 1 1 1 0 0 0 0;

0 0 0 0 0 0 0 0 1 1 1 1 ];

b = [ 14 895 961 773 889 851 164 ]';

c = [ 544 544 544 544 379 379 379 379 318 318 318 318 ]';

ctype = "UUUUUUU";

vartype = "CCCCCCCCCCCC";

EXAMPLE 11

A = [ 188 0 0 0 0 0 0 0 0 0 0 0; 0 188 0 0 0 0 0 0 0 0 0 0; 0 0 188 0 0 0 0 0 0 0 0 0;

0 0 0 910 0 0 0 0 0 0 0 0; 0 0 0 0 910 0 0 0 0 0 0 0; 0 0 0 0 0 910 0 0 0 0 0 0;

0 0 0 0 0 0 260 0 0 0 0 0; 0 0 0 0 0 0 0 260 0 0 0 0; 0 0 0 0 0 0 0 0 260 0 0 0;

0 0 0 0 0 0 0 0 0 536 0 0; 0 0 0 0 0 0 0 0 0 0 536 0; 0 0 0 0 0 0 0 0 0 0 0 536;

1 0 0 1 0 0 1 0 0 1 0 0; 0 1 0 0 1 0 0 1 0 0 1 0; 0 0 1 0 0 1 0 0 1 0 0 1 ];

b = [ 11 752 391 777 114 61 954 621 471 974 482 221 748 8

4 780 ]';

c = [ 426 592 577 426 592 577 426 592 577 426 592 577 ]';

ctype = "UUUUUUUUUUUUUUU";

vartype = "CCCCCCCCCCCC";

EXAMPLE 12

A = [ 54 0 0 0 506 0 0 0 387 0 0 0; 0 54 0 0 0 506 0 0 0

387 0 0; 0 0 54 0 0 0 506 0 0 0 387 0; 0 0 0 54 0 0 0 506

0 0 0 387; 1 0 0 0 0 0 0 0 0 0 0 0; 0 1 0 0 0 0 0 0 0 0

0 0; 0 0 1 0 0 0 0 0 0 0 0 0; 0 0 0 1 0 0 0 0 0 0 0 0; 0

0 0 0 1 0 0 0 0 0 0 0; 0 0 0 0 0 1 0 0 0 0 0 0; 0 0 0 0 0

0 1 0 0 0 0 0; 0 0 0 0 0 0 0 1 0 0 0 0; 0 0 0 0 0 0 0 0

1 0 0 0; 0 0 0 0 0 0 0 0 0 1 0 0; 0 0 0 0 0 0 0 0 0 0 1 0

; 0 0 0 0 0 0 0 0 0 0 0 1 ];

b = [ 758 609 792 680 256 645 659 944 847 152 887 679 579

894 420 986 ]';

c = [ 526 928 217 682 222 193 328 488 182 151 884 409 ]';

ctype = "UUUUUUUUUUUUUUUU";

vartype = "CCCCCCCCCCCC";

EXAMPLE 13

A = [ 276 0 0 663 0 0 867 0 0 633 0 0; 0 276 0 0 663 0 0

867 0 0 633 0; 0 0 276 0 0 663 0 0 867 0 0 633; 1 0 0 0 0

0 0 0 0 0 0 0; 0 1 0 0 0 0 0 0 0 0 0 0; 0 0 1 0 0 0 0 0

0 0 0 0; 0 0 0 1 0 0 0 0 0 0 0 0; 0 0 0 0 1 0 0 0 0 0 0 0

; 0 0 0 0 0 1 0 0 0 0 0 0; 0 0 0 0 0 0 1 0 0 0 0 0; 0 0 0

0 0 0 0 1 0 0 0 0; 0 0 0 0 0 0 0 0 1 0 0 0; 0 0 0 0 0 0

0 0 0 1 0 0; 0 0 0 0 0 0 0 0 0 0 1 0; 0 0 0 0 0 0 0 0 0 0

0 1 ];

b = [ 206 107 837 34 123 28 873 825 302 68 16 691 813 140

317 ]';

c = [ 649 355 366 179 20 71 647 106 174 344 982 262 ]';

ctype = "UUUUUUUUUUUUUUU";

vartype = "CCCCCCCCCCCC";

N m p values to run doc skipped EX14

EXAMPLE 15

A = [ 758 0 0 0 0 0 0 0 781 0 0 0 0 0 0 0; 0 758 0 0 0 0

0 0 0 781 0 0 0 0 0 0; 0 0 758 0 0 0 0 0 0 0 781 0 0 0 0

0; 0 0 0 758 0 0 0 0 0 0 0 781 0 0 0 0; 0 0 0 0 305 0 0 0

0 0 0 0 772 0 0 0; 0 0 0 0 0 305 0 0 0 0 0 0 0 772 0 0;

0 0 0 0 0 0 305 0 0 0 0 0 0 0 772 0; 0 0 0 0 0 0 0 305 0

0 0 0 0 0 0 772; 1 0 0 0 1 0 0 0 0 0 0 0 0 0 0 0; 0 1 0 0

0 1 0 0 0 0 0 0 0 0 0 0; 0 0 1 0 0 0 1 0 0 0 0 0 0 0 0 0

; 0 0 0 1 0 0 0 1 0 0 0 0 0 0 0 0; 0 0 0 0 0 0 0 0 1 0 0

0 1 0 0 0; 0 0 0 0 0 0 0 0 0 1 0 0 0 1 0 0; 0 0 0 0 0 0 0

0 0 0 1 0 0 0 1 0; 0 0 0 0 0 0 0 0 0 0 0 1 0 0 0 1 ];

b = [ 538 704 56 433 447 436 678 117 569 373 923 747 487

781 742 652 ]';

c = [ 791 831 841 95 791 831 841 95 509 225 426 737 509 2

25 426 737 ]';

ctype = "UUUUUUUUUUUUUUUU";

vartype = "CCCCCCCCCCCCCCCC";

EXAMPLE 16

A = [ 47 0 0 0 0 0 0 0 251 0 0 0 0 0 0 0; 0 47 0 0 0 0 0

0 0 251 0 0 0 0 0 0; 0 0 236 0 0 0 0 0 0 0 94 0 0 0 0 0;

0 0 0 236 0 0 0 0 0 0 0 94 0 0 0 0; 0 0 0 0 632 0 0 0 0 0

0 0 985 0 0 0; 0 0 0 0 0 632 0 0 0 0 0 0 0 985 0 0; 0 0

0 0 0 0 339 0 0 0 0 0 0 0 647 0; 0 0 0 0 0 0 0 339 0 0 0

0 0 0 0 647; 1 0 1 0 1 0 1 0 0 0 0 0 0 0 0 0; 0 1 0 1 0 1

0 1 0 0 0 0 0 0 0 0; 0 0 0 0 0 0 0 0 1 0 1 0 1 0 1 0; 0

0 0 0 0 0 0 0 0 1 0 1 0 1 0 1 ];

b = [ 981 949 163 977 375 703 190 876 477 172 763 996 ]';

c = [ 752 923 752 923 752 923 752 923 537 589 537 589 537

589 537 589 ]';

ctype = "UUUUUUUUUUUU";

vartype = "CCCCCCCCCCCCCCCC";

EXAMPLE 17

A = [ 595 0 0 0 361 0 0 0 814 0 0 0 907 0 0 0; 0 595 0 0

0 361 0 0 0 814 0 0 0 907 0 0; 0 0 29 0 0 0 30 0 0 0 938

0 0 0 179 0; 0 0 0 29 0 0 0 30 0 0 0 938 0 0 0 179; 1 0 1

0 0 0 0 0 0 0 0 0 0 0 0 0; 0 1 0 1 0 0 0 0 0 0 0 0 0 0 0

0; 0 0 0 0 1 0 1 0 0 0 0 0 0 0 0 0; 0 0 0 0 0 1 0 1 0 0

0 0 0 0 0 0; 0 0 0 0 0 0 0 0 1 0 1 0 0 0 0 0; 0 0 0 0 0 0

0 0 0 1 0 1 0 0 0 0; 0 0 0 0 0 0 0 0 0 0 0 0 1 0 1 0; 0

0 0 0 0 0 0 0 0 0 0 0 0 1 0 1 ];

b = [ 405 757 881 1 788 494 383 985 243 612 873 480 ]';

c = [ 132 107 132 107 897 83 897 83 659 957 659 957 64 80

64 80 ]';

ctype = "UUUUUUUUUUUU";

vartype = "CCCCCCCCCCCCCCCC";

EXAMPLE 40

c=[100 53 98 5 99 100 53 98 5 100 53 98 5 99 100 53 98 5 100 53 98 5 66 94 97 76 7 66 94 97 76 7 66 94 97 76 7 66 94 97 76 7 66 94 97 76 7 15 50 45 17 59 15 50 45 17 59 15 50 45 17 59 15 50 45 17 59 15 50 45 17 59 15 77 48 84 32 15 77 48 84 32 15 77 48 84 32 15 77 48 84 32 15 77 48 84 32 15 77 48 84 32 50 94 42 51 41 50 94 42 51 41 50 94 42 51 41 50 94 42 51 41 50 94 42 51 41]';

111 112 113 114 115 121 122 123 124 125 131 132 133 134 135 141 142 143 144 145 151 152 153 154 155 211 212 213 214 215 221 222 223 224 225 231 232 233 234 235 241 242 243 244 245 251 252 253 254 255 311 312 313 314 315 321 322 323 324 325 331 332 333 334 335 341 342 343 344 345 351 352 353 354 355 411 412 413 414 415 421 422 423 424 425 431 432 433 434 435 441 442 443 444 445 451 452 453 454 455 511 512 513 514 515 521 522 523 524 525 531 532 533 534 535 541 542 543 544 545 551 552 553 554 555

22+22+22+22+22+15 = 125

a=[

];

b=[54 19 92 99 45 13 24 37 59 13 59 6 97 40 12 9 46 20 61 53 59 41 32 62 40 84 57 79 92 85 45 86 12 26 87 75 44 68 47 61 78 2 96 67 39 30 64 24 9 21]';

A = [ 595 0 0 0 361 0 0 0 814 0 0 0 907 0 0 0; 0 595 0 0  
0 361 0 0 0 814 0 0 0 907 0 0; 0 0 29 0 0 0 30 0 0 0 938  
0 0 0 179 0; 0 0 0 29 0 0 0 30 0 0 0 938 0 0 0 179; 1 0 1  
 0 0 0 0 0 0 0 0 0 0 0 0 0; 0 1 0 1 0 0 0 0 0 0 0 0 0 0 0  
 0; 0 0 0 0 1 0 1 0 0 0 0 0 0 0 0 0; 0 0 0 0 0 1 0 1 0 0  
0 0 0 0 0 0; 0 0 0 0 0 0 0 0 1 0 1 0 0 0 0 0; 0 0 0 0 0 0  
 0 0 0 1 0 1 0 0 0 0; 0 0 0 0 0 0 0 0 0 0 0 0 1 0 1 0; 0  
0 0 0 0 0 0 0 0 0 0 0 0 1 0 1 ];  
b = [ 405 757 881 1 788 494 383 985 243 612 873 480 ]';  
c = [ 132 107 132 107 897 83 897 83 659 957 659 957 64 80  
 64 80 ]';  
ctype = "UUUUUUUUUUUU";  
vartype = "CCCCCCCCCCCCCCCC";