数学实验报告

实验序号： 日期：2017年 10 月 11 日

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| 班 级 | 信计2015级 | 姓 名 | 李嘉杰 | 学 号 | 15015118 |
| 实验名称 | 矩阵的基本运算（二） | | | | |
| 实验内容：  书本实验内容 | | | | | |
| 实验结果：  sy1sj  X6 = B\*inv(A)  ## ans =  ## 0.99313 -0.25136 1.57475 -0.16450 0.90373 0.12428  ## 6.13297 -0.30234 5.45361 3.29260 2.25619 -1.85689  ## 7.49915 -1.07264 6.91913 3.59152 3.85052 -1.32653  ## 9.48541 -1.57536 10.06864 3.26252 5.65798 -1.07797  ## 11.84473 -2.59702 13.10891 3.39694 8.15604 -0.42334  ## 2.89210 -0.44740 2.29013 1.44832 1.11846 -0.72792  X7 = A\b'  ## X7 =  ## -0.85160  ## 2.49991  ## 2.32943  ## 1.05776  ## 1.92994  ## 1.21963  [X8 D] = eig(X6)  ## X8 =  ## 0.063243 -0.052133 0.323508 -0.114561 0.240718 -0.198069  ## 0.299122 0.844205 -0.487231 -0.541640 0.077717 -0.372154  ## 0.394651 0.333528 -0.598880 -0.037717 0.147480 0.403758  ## 0.521136 0.229262 0.048136 -0.266838 0.133614 0.325608  ## 0.679908 -0.333548 0.259994 0.122524 -0.578630 -0.592041  ## 0.130072 0.097692 -0.478933 -0.778373 0.749399 0.450240  ## D =  ## Diagonal Matrix  ## 1.8247e+01 0 0 0 0 0  ## 0 1.2614e+00 0 0 0 0  ## 0 0 -1.0257e+00 0 0 0  ## 0 0 0 -1.8216e-01 0 0  ## 0 0 0 0 1.5410e-15 0  ## 0 0 0 0 0 -7.8562e-16  Clear;clc;  sy1sj;  a1 = A(1,:)  a2 = A(2,:)  a3 = A(3,:)  a4 = A(4,:)  a5 = A(5,:)  a6 = A(6,:)  b1 = A(:,1)  b2 = A(:,2)  b3 = A(:,3)  b4 = A(:,4)  b5 = A(:,5)  b6 = A(:,6)  for i = 1:3  for j = i:3  A3(i,j) = A(2i-1,2j);  end  end  A4 = [A ones(6);zeros(6) B]  A5 = orth(A)  A5\*A5' == ones(rank(A))  A7 = dot(a1,a2)  # row 1,4 exchage  templ = A(1,;)  A(1,:)=A(4,:)  A(4,:)=templ  # column 3 multiply 6  A(:,3)=A(:,3)\*6  # row 5 add 10 times the row 1  A(5,:) = A(1,:)\*10  A70 = reff(A)  ## ans =  ## 1.00 0.00 0.00 0.00 -0.69 2.44  ## 0.00 1.00 0.00 0.00 5.60 -10.58  ## 0.00 0.00 1.00 0.00 0.63 -1.20  ## 0.00 0.00 0.00 1.00 -2.84 3.18  ## 0.00 0.00 0.00 0.00 0.00 0.00  ## 0.00 0.00 0.00 0.00 0.00 0.00  A7 = A(:,1:4)  A71 = A7\*A70(1:4,5)  A72 = A7\*A70(1:4,6)  [L, U] = lu(A)  eu = norm(A, 2) % Euclidean norm  in = norm(A, inf) % infinite norm  one = norm(A, 1) % 1th norm  fro = norm(A, 'fro') % f norm  con2 = cond(A, 2) % 2-norm condition numebr  coni = cond(A, inf) % inf-norm condition number | | | | | |
| 思考与深入：  方便 | | | | | |