Matrix Algebra
Lesson 3

Kevin Zollicoffer

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Problem 3.1

a

$det(A) = -8$

b

$tr(A) = 2$

c

$\begin{bmatrix} 4 & -1 \end{bmatrix}$

d

$\lambda_1 \lambda_2 = det(A)$

e

$\lambda_1 + \lambda_2 = tr(A)$

f

$\begin{bmatrix} .7071 & -.7071 \\ .7071 & .7071 \end{bmatrix}$

Problem 3.2

a

.896

b

Using Sarrus's rule ...

$(-\lambda^3 + .2^3 + .2^3) - (-\lambda + .2^2)^3$
$=$
$(-\lambda^3 + .2^6) + (\lambda^3 - .2^6)$
$=$
$(-\lambda^3 + .000064) + (\lambda^3 - .000064)$

c

$det(A) = \lambda_1\lambda_2\lambda_3$

d