MapleT.A. **2010 Matematik 2A hold 4 : Lay5.1TF**

Maplesoft

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2010 Matematik 2A hold 4, Lay5.1TF
Alex Bondo Andersen, 6/8/10 at 12:48 PM

Question 1: *Score 0/1*

If $Ax = \lambda x$ for some vector x, then λ is an eigenvalue of A INCORRECT

Your Answer: True

Correct Answer: False

Comment: False, since x is not assumed different from the zero vector.

Question 2: *Score 1/1*

A matrix A is not invertible if and only if 0 is an eigenvalue of A. CORRECT

Your Answer: True

Question 3: *Score 1/1*

A number c is an eigenvalue of A if and only if the equation $(A - cI)x = 0$ has a nontrivial solution. CORRECT

Your Answer: True

Question 4: *Score 0/1*

Finding an eigenvector of A may be difficult, but checking whether a given vector is in fact an eigenvector is easy. INCORRECT

Your Answer: False

Correct Answer: True

Question 5: *Score 1/1*

To find the eigenvalues of A, reduce A to echelon form. CORRECT

Your Answer: False

Question 6: *Score 0/1*

If $Ax = \lambda x$ for some scalar λ, then x is an eigenvector of A. INCORRECT

Your Answer: True

Correct Answer: False

Question 7: *Score 1/1*

If $\mathbf{v}_1$ and $\mathbf{v}_2$ are linearly independent eigenvectors, then they corrrespond to distinct eigenvalues. 

Your Answer: False

Question 8: *Score 1/1*

The eigenvalues of a matrix are on its main diagonal. 

Your Answer: False

Question 9: *Score 1/1*

An eigenspace of A is a null space of a certain matrix. 

Your Answer: True