MATLAB Problem FINAL

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required fields*

Title*

Matrix-vector multiplication as a linear combination of columns (practice 2)

Problem Description and Instructions*

Normal

TEXT CODE INSERT

Let the matrix again be

$$A = \begin{bmatrix} 1 & 6 & 8 \\ 2 & 7 & 11 \\ 3 & 8 & 14 \\ 4 & 9 & 17 \\ 5 & 10 & 20 \end{bmatrix}$$

Find a vector, x, such that $Ax = b$, where $b = [6, 7, 8, 9, 10]^{\mathsf{T}}$.

Think about how many such solutions, x, exist, and how this is related to the previous exercise.

Files Referenced

None

+ Add file

Problem Type*

○ Script ○ Function

Code

Reference Solution | Learner Template

```
1 A = [1 6 8; 2 7 11; 3 8 14; 4 9 17; 5 10 20];
2 b = [6 7 8 9 10]';
3
4 x = ;
```

Assessment*

Assessment Method: Correct/Incorrect

Only show feedback for initial error

Test 1: x exists and is of the right size

Test Type

MATLAB Code

MATLAB Code*

```
1 assert( exist('x') == 1 );
2 assert( (size(x,1) == 3) && (size(x,2) == 1) );
```

Feedback on Incorrect (in addition to default feedback)

Normal

TEXT CODE INSERT

Variable x must exist, and must be of a size compatible for multiplication by A.

Pretest

Test 2: Check if x is correct

Test Type

MATLAB Code

MATLAB Code*

```
1 assert( norm(A*x-b)<1e-4 )
```

Feedback on Incorrect (in addition to default feedback)

Normal

TEXT CODE INSERT

Pretest

+ Add Assessment

Learner Preview Validate Reference Solution

Set to Draft