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

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 \( b = [6, 7, 8, 9, 10]^T \).

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

Reference Solution Learner Template

MATLAB Code

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 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)

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

Pretest