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Math 362 Fourier Analysis

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Ch. 4.1 HW

Section 4.1

4.1.20

Find using the following methods

1. Using the matrix-matrix multiplication, as in Definition 4.1.4
2. Using a column expansion, as in Equation 4.2 or result 4.1.1.
3. Using MATLAB. Be sure to show your commands.

a.)



b.)



c.)

|  |  |
| --- | --- |
| Input Command | Output |
| >> A=[5,-2,3;4,1,5;3,3,2]  A =  5 -2 3  4 1 5  3 3 2  >> x=[-1;3;2]  x =  -1  3  2  >> A\*x | ans =  -5  9  10 |

4.1.45

Refer to the matrix from the Exercise specified. Then use and MATLAB to solve for . Be sure to show your commands.

“Exercise 29”

|  |  |
| --- | --- |
| Input Commands | Output |
| >> A=[1,1;1,4];  >> a=A^-1;  >> b=[1;2];  >> a\*b | ans =  0.6667  0.3333 |

4.1.59

For the Matrices and do the following.

1. Compute the inner product
2. Determine whether and are orthogonal to each other.

