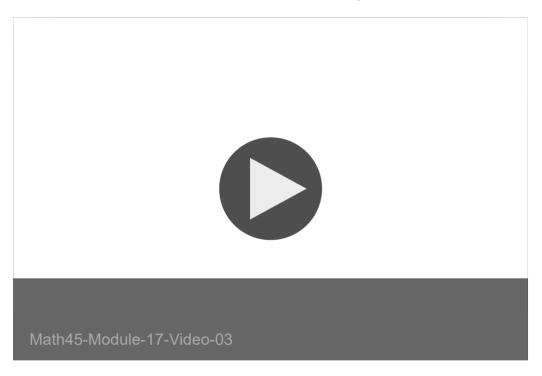
## Verify a given vector is a solution \*\*

Here we answer the question: How do we verify a given vector is a solution?

If we are given a vector  $X=\begin{pmatrix}x\\y\end{pmatrix}$ , we can verify whether it is a solution to a differential equation  $X'=\begin{pmatrix}a&b\\c&d\end{pmatrix}X+F$  by simply plugging it in! However, this does mean we have to work out the details of matrix-vector multiplication, adding vectors and scalar multiplication.

## Discussion, comments, and examples:



## WeBWorK module 17 exercises:

Problem 6

## References:

See, for example, Section 10.2 in the <u>textbook</u> 
<u>textbook</u> 
<u>(https://digitalcommons.trinity.edu/mono/8/)</u>.