

For Skills Check 1, you should be able to give a mathematically precise definition of the following:

- linear combination
- linearly independent/dependent
- span
- consistent/inconsistent
- free variable
- trivial/nontrivial linear combination
- ... and any other terminology or notation we've discussed in class.

You should be able to do the following computations:

- Do vector arithmetic: addition, subtraction, scalar multiplication, and dot product.
- Multiply matrices.
- Express a vector as a linear combination of other vectors.
- Determine whether or not a set of vectors is linearly independent.
- Determine whether one vector is in the span of others.
- Find the span of a set of vectors.
- Put a matrix into reduced row echelon form, and recognize whether or not it is.
- Convert a system of linear equations into augmented-matrix form and matrix-equation ( $Av=b$ ) form, and vice versa.
- Find all solutions to a system of linear equations.