On the first test, you will need to know how to:

1. Compute the projection of a vector onto a nonzero vector.
2. Compute the projection of a vector onto a nonzero vector.
3. Compute the cross product of two vectors (and use it as a measure of area).
4. Determine whether a given vector is in the span of other given vectors.
5. Compute the triple product of three vectors (and use it as a measure of volume).
6. Use the orthonormal technique to compute the coefficients in a linear combination of orthonormal vectors.
7. Determine whether a given set of vectors is linearly independent.
8. Compute the angle between two vectors.
9. Compute the length of a given vector.
10. Determine whether an ordered set of three vectors in $\mathbb{R}^3$ obeys the right-hand rule.
11. Determine whether a given subset is a subspace.