

**Jan 17/Jan 19**

## **Review Chapter 2**

- Review span and linear independence. Relate linear systems and matrices.
- Do the unifying theorem.
- Introduce the standard basis. Use it to understand matrix multiplication.
- Demonstrate that the difference of two solutions is a solution to the homogeneous system.

## **Chapter 3.1 Linear Transformation**

- Give definition of a linear transformation.
- Give both examples and nonexamples.
- Matrix multiplication is linear. All linear transformations come from this.
- Introduce range, relate to span and existence of solution.
- Introduce 1-1 and onto.
- Talk about span and linear independence again.
- Give the unifying theorem again.
- Show  $\mathbb{R}^2$  to  $\mathbb{R}^2$  visualizations.