Sometimes special matrices will complicated calculations because they are

- not invertible
- infinite number of a vectors
- infinite number of eigenvectors
- reduced dimensionality

singular matrix - if its inverse doesn't exists.

Summary of Module:

1. How much a transformation grows space (the determinant).
2. Special case when determinant is 0
   - ↳ basics vectors are not linearly independent.
     - ↳ the inverse does not exist
3. Define matrices - as transformations of space.
   - ↳ different archetypes of matrices
     - rotations
     - inversions
     - stretches
     - shears
4. How to combine successive transformations.
   - matrix multiplication (composition).
5. How to solve systems of linear equations by
   - elimination - gauss jordan
6. How to find inverses
   - RREF
   - QR Factorization.