

Environment Setup Instructions

Multivariate Linear Regression

- ✓ **Video:** Multiple Features
8 min
- ✓ **Reading:** Multiple Features
3 min
- ✓ **Video:** Gradient Descent for Multiple Variables
5 min
- ✓ **Reading:** Gradient Descent For Multiple Variables
2 min
- ✓ **Video:** Gradient Descent in Practice I - Feature Scaling
8 min
- ✓ **Reading:** Gradient Descent in Practice I - Feature Scaling
3 min
- ✓ **Video:** Gradient Descent in Practice II - Learning Rate
8 min
- ✓ **Reading:** Gradient Descent in Practice II - Learning Rate
4 min
- ✓ **Video:** Features and Polynomial Regression
7 min
- ✓ **Reading:** Features and Polynomial Regression
3 min

Computing Parameters Analytically

- ✓ **Video:** Normal Equation
16 min
- ✓ **Reading:** Normal Equation
3 min
- ✓ **Video:** Normal Equation Noninvertibility
5 min
- ✓ **Reading:** Normal Equation Noninvertibility
2 min

Submitting Programming Assignments

Review

Octave/Matlab Tutorial

Review



Normal Equation Noninvertibility

When implementing the normal equation in octave we want to use the 'pinv' function rather than 'inv.' The 'pinv' function will give you a value of θ even if $X^T X$ is not invertible.

If $X^T X$ is **noninvertible**, the common causes might be having :

- Redundant features, where two features are very closely related (i.e. they are linearly dependent)
- Too many features (e.g. $m \leq n$). In this case, delete some features or use "regularization" (to be explained in a later lesson).

Solutions to the above problems include deleting a feature that is linearly dependent with another or deleting one or more features when there are too many features.

✓ Complete

Go to next item

