SFWR ENG 4O03

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# Linear

**Linear Program**: an optimization problem in which the objective function is linear and each constraint is a linear inequality or equality

**Decision variables**: describe our choices that are under our control

**Objective function**: describes a criterion that we wish to max/minimize

**Constraints**: describe the limitations that restrict our choices for our decision variables, always *inequalities*.

## Converting constraints to equalities

**Slack variable**: equation variable greater than constraint, added

**Surplus variable**: equation variable less than constraint, subtracted

**Hyperplane**: a hyperplane in Rx is a shape in Rx–1, e.g. line in R2

**Optimal Solution**: