Lecture: Definition of a Relation and Domain and Range

A set of ordered pairs (x, y) is called a relation in x and y

- The set of x values in an ordered pair is the domain of the relation
- The set of y values in an ordered pair is the range of the relation

Given a relation in x and y we say that y is the function of x if for each value of x in the domain, there is exactly one value of y in the range

- a function can't have the same x value w/ two different y values

Vertical line test

- The graph defines y as a function of x if no vertical line intersects the graph in more than one point

Finding intercepts using function notation

given a function defined by $y = f(x)$

- the x intercepts are the real solutions to the equation $f(x) = 0$
- the y intercept is given by $f(0)$