

Functions and Graphs Checklist for Intermediate Algebra

Do you know all this stuff? You should! Use this sheet as a checklist of knowledge as you study for the final. Ask questions as needed!

Functions & Graphs:

- definition of function, domain, range
- determining if a function or not and finding domain & range given:
 - set of ordered pairs
(same x , different y means not a function)
 - mapping
 - graph (VLT)
- function notation
- evaluating functions

Transformations, Combinations, Composition, & Inverse Functions:

- transformations:
 - shifts up, down, left, right
 - "flips" - reflections about the x or y axis
 - stretching & shrinking
- combinations: $f+g$, $f-g$, fg , f/g
- inverse functions including:
 - definition of one-to-one
 - determining if a function is 1:1 given:
 - a set of ordered pairs
(same y , different x means not 1:1)
 - mapping,
 - graph (HLT)
 - determining if a function has an inverse
(it does only if it is 1:1)
 - finding f^{-1} algebraically
 - verifying if 2 functions are inverses of one another
(algebraically: if $f \circ f^{-1}(x)$ and $f^{-1} \circ f(x)$ both equal x)
 - graphical connection between f and f^{-1}
(symmetric to one another about $y=x$ line)
 - connection between the domains and ranges of f and f^{-1}
($\text{dom } f = \text{rng } f^{-1}$ and $\text{rng } f = \text{dom } f^{-1}$)
- evaluating functions (and their combinations, composition, inverses) given:
 - set of ordered pairs (or chart of data points)
 - mapping
 - graph
 - equation