BEFORE YOU READ

Eleven topics, one subject

The functions section covers eleven topics. Each one studies a different aspect of how an input becomes an output.

- L0 **Function topics**
  - L1 **What goes in and comes out**
    - L2 **Domain** the set of allowed inputs
    - L2 **Range** outputs the function actually produces
  - L1 **Seeing and describing**
    - L2 **Graphs** functions drawn as curves
    - L2 **Analyzing** increases, decreases, extreme values
    - L2 **Properties** symmetry, monotonicity, boundedness, continuity
  - L1 **Building new functions**
    - L2 **Arithmetic** addition, subtraction, multiplication, division
    - L2 **Transformations** shifts, stretches, compressions, reflections
    - L2 **Composition** chaining one function's output into another
    - L2 **Inverse** recovering input from output
  - L1 **Kinds of functions**
    - L2 **Piecewise** different rules on different intervals
    - L2 **Families** groups by shared structure

TAKEAWAY

Start with what goes in and what comes out

Domain and range come first: what goes in and what comes out. The rest build on them.