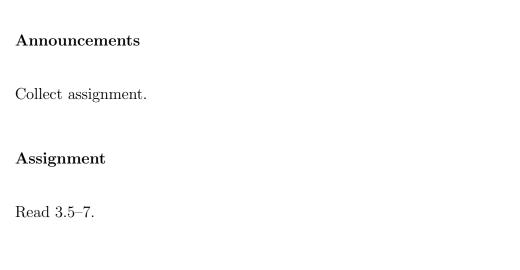
# Combinational Design Example

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### 1 Administrivia



#### From Last Time

Design process and analysis.

#### Outline

- 1. Outline of design procedure.
- 2. Design of a two-bit multiplier.

#### Coming Up

Well-known combinational circuits: decoders, encoders, muxes.

## 2 Design Procedure Outline

- 1. From circuit description, determine number of inputs and outputs. Name I/O signals.
- 2. Determine truth table for each output.
- 3. Obtain minimized Boolean functions for each output.
- 4. Draw the schematic.
- 5. Verify.

Often in multiple output circuits, implicant terms can be shared between outputs, reducing gate count.

### 3 Two-Bit Multiplier

Class exercise.