



Read-only Memory

Exercises Digital Design

Solution vs. Hints:



While not every response provided herein constitutes a comprehensive solution, some serve as helpful hints intended to guide you toward discovering the solution independently. In certain instances, only a portion of the solution is presented.

1 | ROM - Universal logic function

1.1 Memory sizes

- a) 2Byte
- b) 1KiB
- c) 64KiB

rom/logic-function-01

1.2 Realization of a function with multiplexers

- $y_1 = \overline{c \oplus b \oplus a}$
- y_2 no solution available

rom/logic-function-02



2 | ROM - Memory circuit assembly

2.1 Memory allocation table

There are 3 memories (2 RAM's and one ROM) With “some” address bits and a multiplexer the right memory is selected.

rom/rom-circuits-01



3 | ROM - Types of read-only memory

3.1 Intel HEX File CRC calculations

- a) **0x1E**
- b) **0xFC**
- c) **0x1A**
- d) **0x8B**
- e) **0xA6**
- f) **0x16**
- g) **0xFF**

rom/crc-01



4 | ROM - Typical circuits

4.1 ROM-Type

1000%

rom/rom-types-01