Exercise 1

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1a)

Input Informations	
A0-A18	Address Input
PQ0-PQ15	Data Input
CE#	Chip enable input
WE#	Write Enable Input
OE#	Output enable Input
LB#	Lower Byte Control
UB#	Upper Byte Control

Output Information	
PQ0-PQ15	Data Output

1b)

b) Describe the purpose of CE#, OE#, WE#, LB#, UB#, A0-A18, and DQ0-DQ15 signals. The mere name from the Pin Description table is not sufficient. Give a short sentence about the purpose of each signal. Hint: The truth table on page 3 is useful. (1 point)

- CE#
  A control input that, when active, permits operation of the integrated circuit and, when inactive, causes the integrated circuit to be in a reduced-power standby mode.
- OE#
  if this pin is in its active state then the content of internal latches/gates of that particular IC is reflected on the pins, by keeping this OE pin in its inactive state the ouputs are tristated/high impedance states.
- WE#
  The input that, when true, causes the data present on the D or the DQ pin(s) to be written into the address cell(s) of the device. For devices that have one WE per byte, the WEs are designated LWE and UWE. For devices that have more than two bytes and one WE per byte, and for all modules that have multiple WEs, the WEs are numbered beginning with 0.
- LB# / UB#
- Individual bytes are accessed by specifying the UB (upper byte) and LB (lower byte) control signals.
- A0-A18
  Basic input controls.
- DQ0-DQ15
  Returns the data of the adress.

1c)

One read cycle neends min 55ns. So in 1 Second you could fit 18.181.818 read cycles in one second a 16 Bit → 290.909.088 Bit.

2a)
Truth Table:

Switch	Door	Light
100	0	0
	1	1
010	0	1
	1	1
001	0	0
	1	0

2b)