

# Exercises 2.2

# Problems

1. Find 1-stage logic circuits (MOSFET circuits) for the following logical operations.

$$Y = \overline{A \cdot B + C \cdot D} \quad (\text{AOI22})$$

$$Y = \overline{(A+B) \cdot (C+D)} \quad (\text{OAI22})$$

$$Y = \overline{(A+B+C) \cdot D} \quad (\text{OAI31})$$

2. Find the minimum number of MOSFETs and the minimum stages of the logic circuits. However, the number of input is no more than 4 for each gate.

$$Y = \overline{A+B+C+D+E+F+G+H}$$

$$Y = A+B+C+D+E+F+G+H$$