

# MAC0444 - List 1

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**Question 4:** Express the following expressions with a set of linear equations.

**(A)**  $z = x \wedge y$  (AND)

$$\begin{cases} z - x \leq 0 \\ z - y \leq 0 \end{cases}$$

**(B)**  $z = x \vee y$  (OR)

$$\begin{cases} x + y - z \geq 0 \end{cases}$$

**(C)**  $\neg z = x$  (NOT)

$$\begin{cases} z + x = 0 \end{cases}$$

**(D)**  $z = x \oplus y$  (EXCLUSIVE-OR)

$$\begin{cases} z - x \leq 0 \\ z - y \leq 0 \end{cases}$$