1)

$$M = \{ x \in]-5; 10[_{\mathbb{Z}} \mid x \bmod 3 = 0 \wedge x \bmod 4 \neq 0 \}$$

2)

$$M = \{ x \in [4; 50[_{\mathbb{N}} \mid \begin{array}{l} x \bmod 28 = 0 \\ x \bmod 4 = 0 \wedge x \bmod 7 = 0 \end{array} \}$$

3)

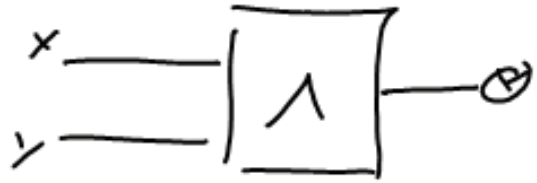
$$M = \{ x \in \text{Matrizen}_{n \times n} \mid \text{Quersumme}(x) > 15 \}$$

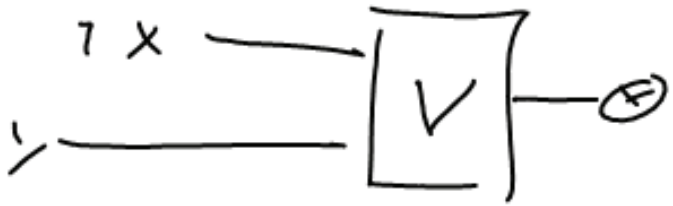
$$\sum_{k=1}^{n} x_k > 15$$

$\cap$ UND $\wedge$ $A(x;y) = x \wedge y$

$\cup$ ODER $\vee$ $A(w;w) = w \wedge w = w$

$\setminus$ NICHT $\neg$





x	y	⊕
F	F	
F	w	
w	w	w

$A(x;y;z) = \neg x \vee y \to z = w$?

$A(\bot;w,w) = \neg\bot \vee w \to w = \top \to \top = w$

x	w	w	w	w	$\bot$	$\bot$	$\bot$	$\bot$
y	$\bot$	w	$\bot$	$\bot$	w	w	$\bot$	$\bot$
z	w	$\bot$	w	$\bot$	w	$\bot$	w	$\bot$
$\neg x$	$\bot$	$\bot$	$\bot$	$\bot$	w	w	w	w
$\neg x \vee y$	w	w	$\bot$	$\bot$	w	w	w	w
$\neg x \vee y \to z$	w	$\bot$	w	w	w	$\bot$	w	$\bot$

$E[A(x;y;z)] = \{(w,w,w),(\bot,\bot,w),(w,\bot,\bot),(\bot,w,w),(\bot,w,\bot)\}$

$= Bool^3 \setminus \{(w,w,\bot),(\bot,w,\bot),(\bot,\bot,\bot)\}$

$$A(x;y;z) = \neg(x \to y) \vee z \leftrightarrow \neg y$$

x	w	w	w	w	f	f	f	f
y	w	w	f	f	w	w	f	f
z	w	f	w	f	w	f	w	f
$(x \to y)$	w	w	f	f	w	w	w	w
$\neg(x \to y)$	f	f	w	w	f	f	f	f
I $\neg(x \to y) \vee z$	w	f	w	w	w	f	w	f
II $\neg y$	f	f	w	w	f	f	w	w
I $\leftrightarrow$ II	f	w	w	w	f	w	w	f

$$\mathcal{F}[A(x;y;z)] = Bool^3 \setminus \{(www);(fww);(fff)\}$$