練習1

$U = \{1, 2, \cdots\cdots 100\}$　$n(U) = 100$

4の倍数 $A = \{4, 8, 12, \cdots 100\}$

$n(A) = 100 \div 4 = 25$

7の倍数 $B = \{7, 14, 21, \cdots 98\}$

$n(B) = 100 \div 7 = 14 \cdots 2 \rightarrow 14$

$100 \div 7 = 14 \cdots 2$
$14 \times 7 = 98$

(1) 4と7の少なくとも一方で割り切れる　$A \cup B$

$n(A \cup B) = n(A) + n(B) - n(A \cap B)$

$A \cap B = \{28, 56, 84\}$

$n(A \cap B) = 3$

$n(A \cup B) = 25 + 14 - 3 = 36$

25
14
39

(2) 4でも7でも割り切れない → $\overline{A} \cap \overline{B}$

$n(\overline{A} \cap \overline{B}) = n(\overline{A \cup B}) = n(U) - n(A \cup B)$

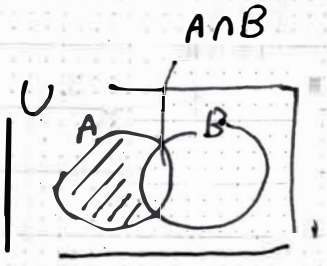
$= 100 - 36 = 64$

(3) 4で割り切れるが7で割り切れない

$A \cap \overline{B}$

$n(A \cap \overline{B}) = n(A) - n(A \cap B)$

$= 25 - 3 = 22$

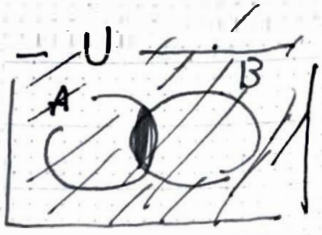


(4) 4と7の少なくとも一方で割り切れない → $\overline{A} \cup \overline{B}$

$\overline{A} \cup \overline{B} = \overline{A \cap B}$

$n(\overline{A \cap B}) = n(U) - n(A \cap B)$

$= 100 - 3 = 97$



ド・モルガン → 図を書いて考える