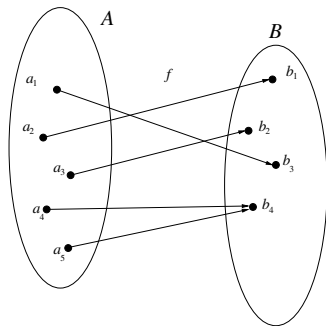
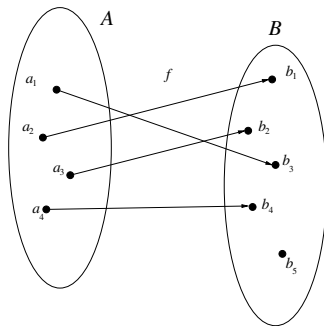


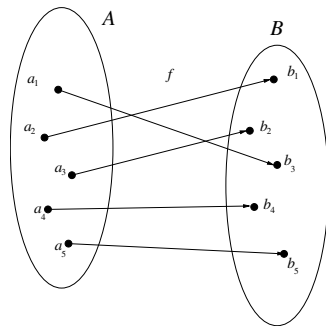
Function properties



Onto but not one-to-one

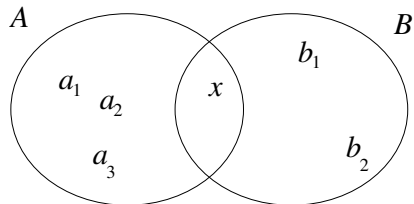


One-to-one but not onto



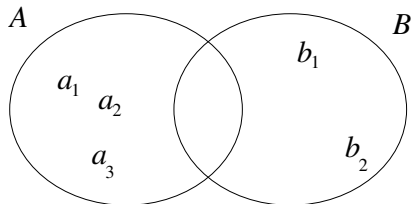
One-to-one correspondence

$$A \cap B = \emptyset \rightarrow |A \cup B| = |A| + |B|$$



$$|A \cup B| = |\{a_1, a_2, a_3, x, b_1, b_2\}| = 6$$

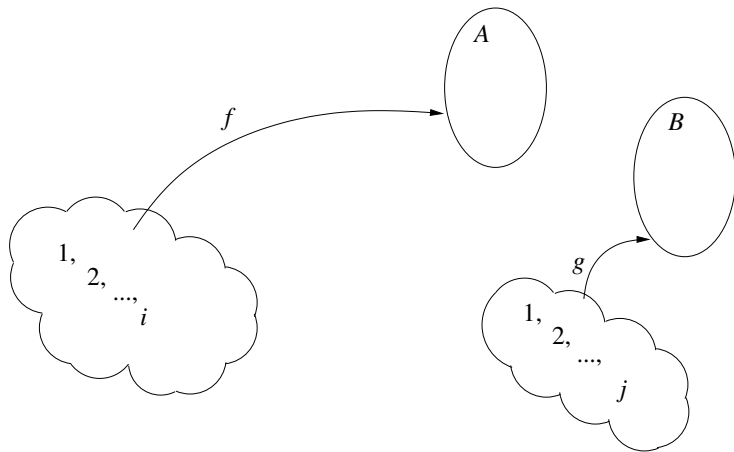
$$\begin{aligned} |A| + |B| &= \\ &= |\{a_1, a_2, a_3, x\}| + |\{x, b_1, b_2\}| \\ &= 4 + 3 = 7 \end{aligned}$$



$$|A \cup B| = |\{a_1, a_2, a_3, b_1, b_2\}| = 5$$

$$\begin{aligned} |A| + |B| &= \\ &= |\{a_1, a_2, a_3\}| + |\{b_1, b_2\}| \\ &= 3 + 2 = 5 \end{aligned}$$

$$A \cap B = \emptyset \rightarrow |A \cup B| = |A| + |B|$$



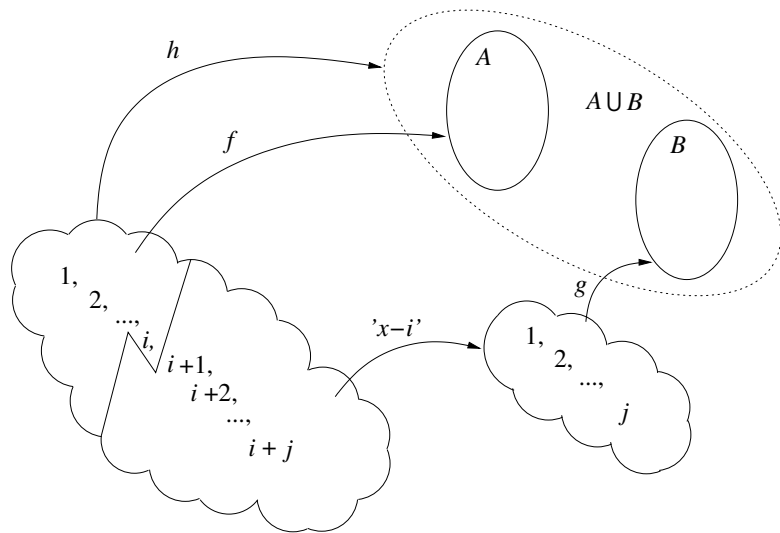
$$A \cap B = \emptyset \rightarrow |A \cup B| = |A| + |B|$$

i	f
1	Zed
2	Yelemis
3	Xavier

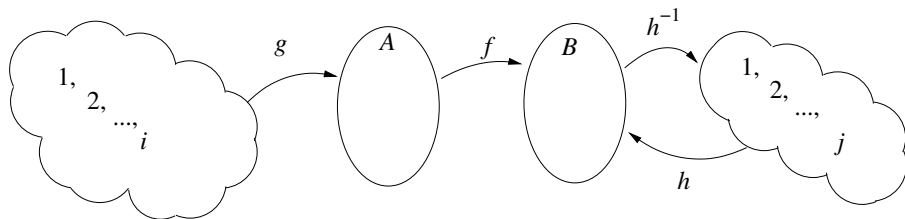
i	g
1	Wilhelmina
2	Valerie
3	Ursula
4	Tassie

i	h
1	$f(1) = \text{Zed}$
2	$f(2) = \text{Yelemis}$
3	$f(3) = \text{Xavier}$
4	$g(4 - 3) = g(1) = \text{Wilhelmina}$
5	$g(5 - 3) = g(2) = \text{Valerie}$
6	$g(6 - 3) = g(3) = \text{Ursula}$
7	$g(7 - 3) = g(4) = \text{Tassie}$

$$A \cap B = \emptyset \rightarrow |A \cup B| = |A| + |B|$$



$f : A \rightarrow B$ is one-to-one $\rightarrow |A| \leq |B|$



$f : A \rightarrow B$ is one-to-one $\rightarrow |A| \leq |B|$

