

## Interpretation $I = (\mathcal{A}, \alpha, \beta)$

- $\mathcal{A}$  is the *carrier* with  $\mathcal{A} \neq \emptyset$
- $\alpha$  is the *meaning* of function and predicate symbols
  - $\alpha_f : \mathcal{A}^n \rightarrow \mathcal{A}$  for all  $f \in \Sigma_n$
  - $\alpha_p \subseteq \mathcal{A}^n$  for all  $p \in \Delta_n$
- $\beta$  is the *variable assignment* with  $\beta : \mathcal{V} \rightarrow \mathcal{A}$

## Interpretation of terms $I : \mathcal{T}(\Sigma, \mathcal{V}) \rightarrow \mathcal{A}$

$$I(X) = \beta(X) \text{ for } X \in \mathcal{V}$$

$$I(f(t_1, \dots, t_n)) = \alpha_f(I(t_1), \dots, I(t_n)) \text{ for } f \in \Sigma_n \text{ and } t_1, \dots, t_n \in \mathcal{T}(\Sigma, \mathcal{V})$$