

135235

AI Class Exercise

1. Every person likes ice cream.

$\forall x, \text{person}(x) \rightarrow \text{likes}(x, \text{ice cream})$

2. Every person loves its mother.

$\forall x, \text{person}(x) \rightarrow \text{loves}(x, \text{mother})$

3. All students take both History and Biology.

$\forall x, \text{students}(x) \rightarrow \text{take}(x, \text{History}) \wedge \forall x, \text{students}(x) \rightarrow \text{take}(x, \text{Biology})$

4. Some students failed History.

$\exists x, \text{students}(x) \vee \text{failed}(x, \text{History})$

5. Not all students take both History and Biology.

$\neg \forall x, \text{students}(x) \rightarrow \text{take}(x, \text{History}) \wedge \neg \forall x, \text{students}(x) \rightarrow \text{take}(x, \text{Biology})$

6. Only one student failed History.

$\exists x, \text{students}(x) \vee \text{failed}(x, \text{History})$

7. Only one student failed both History and Biology.

$\exists x, \text{student}(x) \vee \text{failed}(x, \text{History}) \wedge \exists x, \text{student}(x) \vee \text{failed}(x, \text{Biology})$