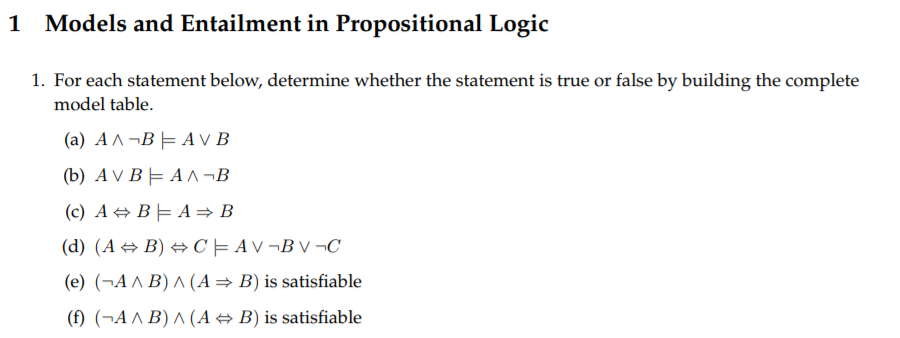
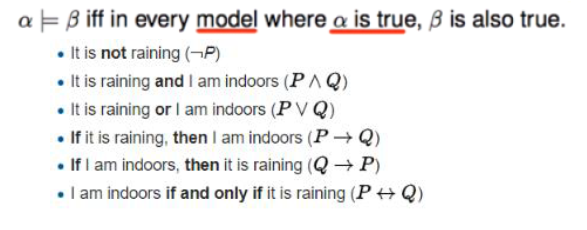
Exercise 3





|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **A** | **B** | **C** | **¬ A** | **¬ B** | **¬C** | **A ^ ¬B** | **¬A ^ B** | **A v B** | **A 🡪 B** | **A 🡨🡪 B** | **(A🡨🡪B) 🡨🡪 C** | **A v ¬B v ¬C** |
| 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 |
| 1 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 1 | 0 | 1 |
| 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 1 |
| 1 | 0 | 0 | 0 | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 1 |
| 0 | 1 | 1 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 |
| 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 1 |
| 0 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 |
| 0 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 1 |

1. True
2. False
3. False
4. True

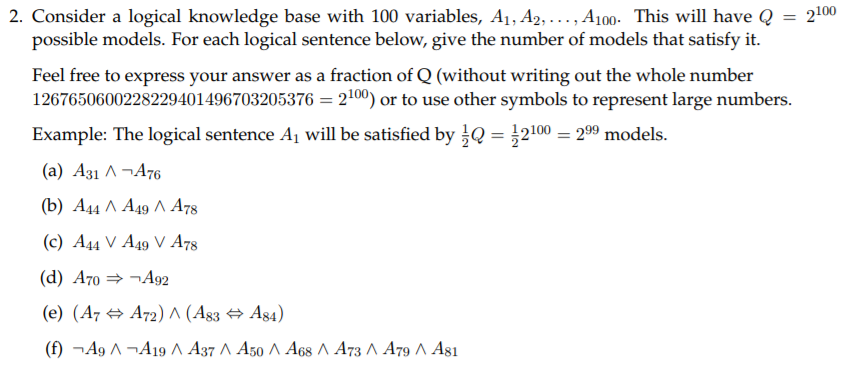
Et uttrykk er "satisfiable" dersom det finnes en kombinasjon som gir uttrykket verdien True.

1. For at uttrykket (¬A ^ B) skal være sant, må A være 0 (A=0), mens B må være 1 (B=1). Det innebærer at uttrykket (A 🡪 B) ikke stemmer siden dette uttrykket krever A=1. (Videre refleksjoner: Kan tenke seg at A=0 og B=1 kan fungere)

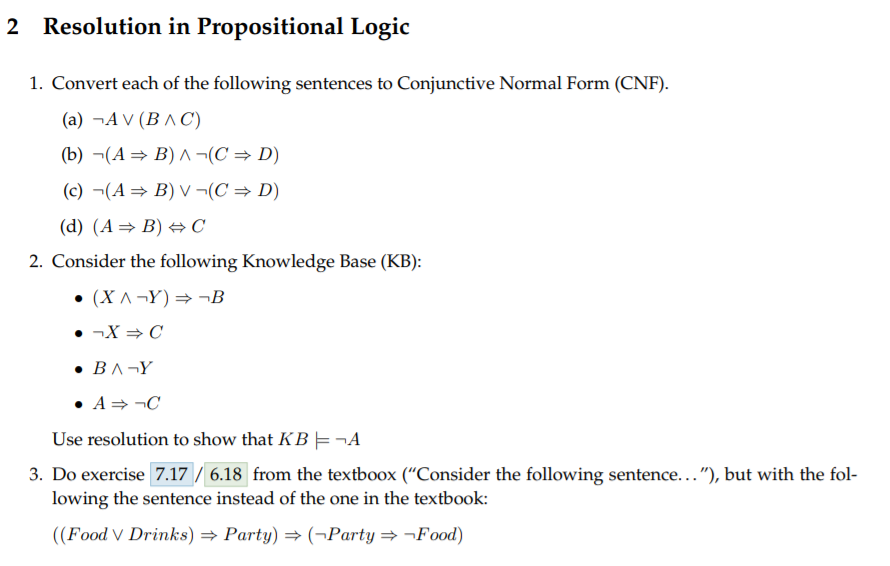
**Not satisfiable**

1. For at uttrykket (¬A ^ B) skal være sant, må A være 0 (A=0), mens B må være 1 (B=1). Dette vil være umulig å forenes med uttrykket (A 🡨🡪 B ) Da dette forutsetter at A=B.

**Not satisfiable**



1. \*\*Q==
2. \*\*\*\*\*\*\*\*Q==**=**



CNF: Logical statements without ^,

* 1. v (B^C)

CNF:

¬A v B

¬A v C

* 1. ^

CNF:

v) ^ v)

v) ^ v)

* 1. v

CNF:

v) v v)

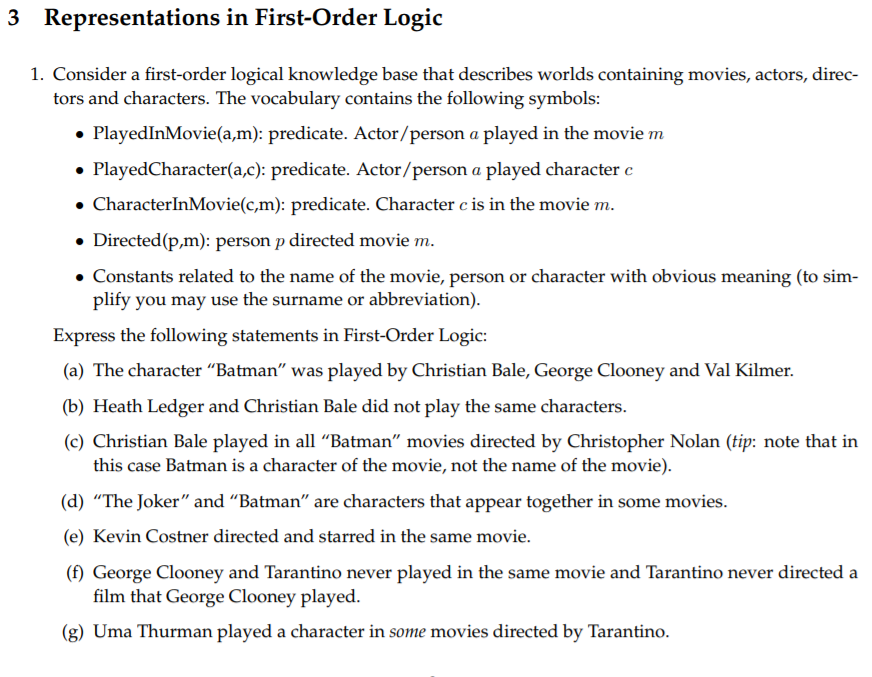
(A v v)) v (B v v))

(A v C) v (A v v (B v C) v (B v D)

* 1. C

v) v ^ v v)

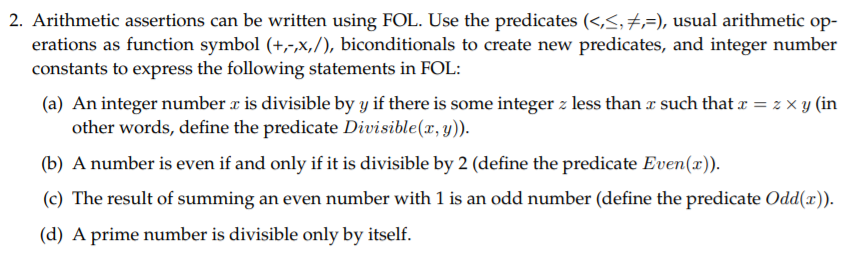
v v ) ^ v v )



Symbols:

1. PlayedCharacter(Bale,Batman) ^ PlayedCharacter(Clooney,Batman) ^ PlayedCharacter(Kilmer, Batman)
2. PlayedCharacter(Ledger,c)=PlayedCharacter(Bale,c)

5. v



1. Devisible(x,y)=
2. Even(x) xmod2=0
3. Odd(x) xmod2=1
4. Prime(x)