

Examen 2023

1. a ✓

2. c, d ✓

3. b ✓

4. a, b ✓

5. a ✓

6. a ✓

7. b, c ✓

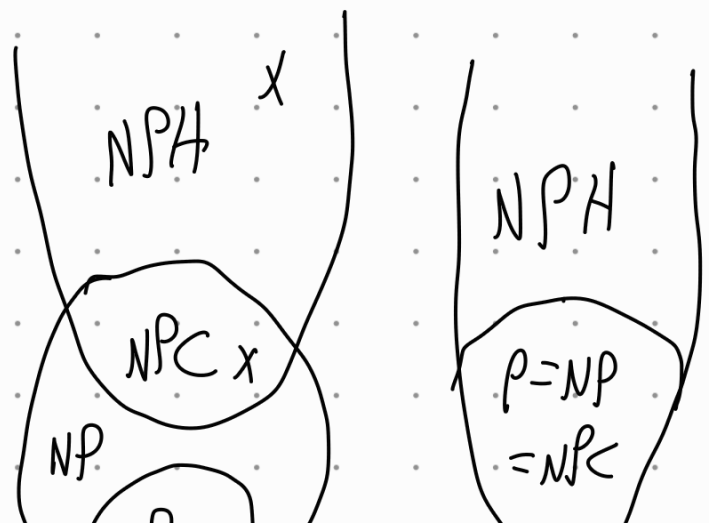
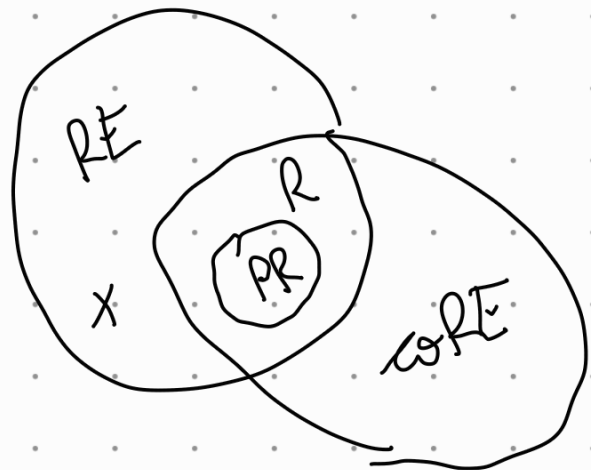
8. a, b ✓

9. a ✓

10. a, b, d ✓

11. b, c ✓

12. b, d ✓



(13) b ✓

(14) a ✓

(15) a, d ✓

(16) d, b 112

(17) a, c ✓

(18) a, b ✓

(19) a, ~~b~~ a, c

(20) a, b, c, d ✓

(21) a, c, d

(22) a, b, c ✓

(23) a, b ✓

(24) a, b, d ✓

$B \in \underline{\text{NPH}}$

$\forall C \in \text{NP}, C \leq_m^P B$

$A \in \text{NPH}$

$C \leq_m^P A$

$A \leq_m^P B$
 $C \leq_m^P B$

$B \in \text{NPC} \Rightarrow \begin{matrix} B \in \text{NPH} \\ B \in \text{NP} \end{matrix}$

$A \leq_m^P B \mid \Rightarrow \underline{A \in \text{NP}}$
 $B \in \text{NP}$

$B \leq_m^P A$

$B \in \text{NPH}$

$\forall C \in \text{NP} \quad C \leq_m^P A$

(25) a ✓

$$B \leq_m^P A \mid \Rightarrow \underline{C \leq_m^P A}$$

(26) a, b ✓

$$A \in \text{NPH}$$

$$B \in \text{NPL} \Rightarrow A = \text{NPC} ?$$

$$B \in \text{NPH} \Leftrightarrow \underline{A \in \text{NPH}}$$

$$B \in \text{NP} \not\Rightarrow A \in \text{NP}$$