

1. UNGHIUL A DOUĂ DREPTE d_1, d_2 NECOPLANARE

$$a_1 \perp d_1; a_2 \perp d_2; a_1 \cap a_2 = \{A\} \Rightarrow \angle (d_1, d_2) = \angle (a_1, a_2)$$

2. DREAPTA PARALELĂ CU UN PLAN

$$a \subset \alpha; d \not\subset \alpha; a \parallel d \Rightarrow d \parallel \alpha$$

3. DREAPTA PERPENDICULARĂ PE UN PLAN

$$\left. \begin{array}{l} a, b \subset \alpha \\ a \cap b = \{O\} \\ d \perp a \\ d \perp b \end{array} \right\} \Rightarrow d \perp \alpha \Rightarrow d \perp c, \forall c \subset \alpha$$

4. PLANE PARALELE

$$\left. \begin{array}{l} a, b \subset \alpha \\ a \cap b = \{O\} \\ a \parallel \beta \\ b \parallel \beta \end{array} \right\} \Rightarrow \alpha \parallel \beta \Rightarrow d \parallel \beta, \forall d \subset \alpha$$

5. UNGHIUL UNEI DREPTE CU UN PLAN ESTE *unghiul determinat de dreaptă și proiecția ei pe plan.*

6. TEOREMA CELOR TREI PERPENDICULARE

$$\left. \begin{array}{l} d \perp \alpha; M \in d \\ d \cap \alpha = \{O\} \\ OA \perp a; a \subset \alpha \end{array} \right\} \Rightarrow MA \perp a$$

RECIPROCA 1: $MO \perp \alpha; O \in \alpha; a \subset \alpha; MA \perp a \Rightarrow OA \perp a$

RECIPROCA 2: $MO \perp OA; OA \perp a; MA \perp a; a \subset \alpha; OA \subset \alpha; MO \cap \alpha = \{O\} \Rightarrow MO \perp \alpha$

7. UNGHI DIEDRU. PLANE PERPENDICULARE

$$\left. \begin{array}{l} \alpha \cap \beta = d \\ a \perp d; a \subset \alpha \\ b \perp d; b \subset \beta \\ a \cap b = \{P\}; P \in d \end{array} \right\} \Rightarrow \angle (\alpha, \beta) = \angle (a, b) \quad \text{DACA } m \angle (\alpha, \beta) = 90^\circ \Rightarrow \alpha \perp \beta$$

TEOREMA 1: $a \perp \beta; a \subset \alpha \Rightarrow \alpha \perp \beta$

TEOREMA 2: $\alpha \perp \beta; \alpha \cap \beta = d; a \perp d; a \subset \alpha \Rightarrow a \perp \beta$