

ROOFS ON FREE-STANDING BUILDINGS



Lecture 13

9 Jan 2023

Assumptions:

- 1) System of eaves is a polygon on $\alpha \parallel \pi_1$.
- 2) Hipped roof ends are inclined at angle φ to α .

Problem 1:

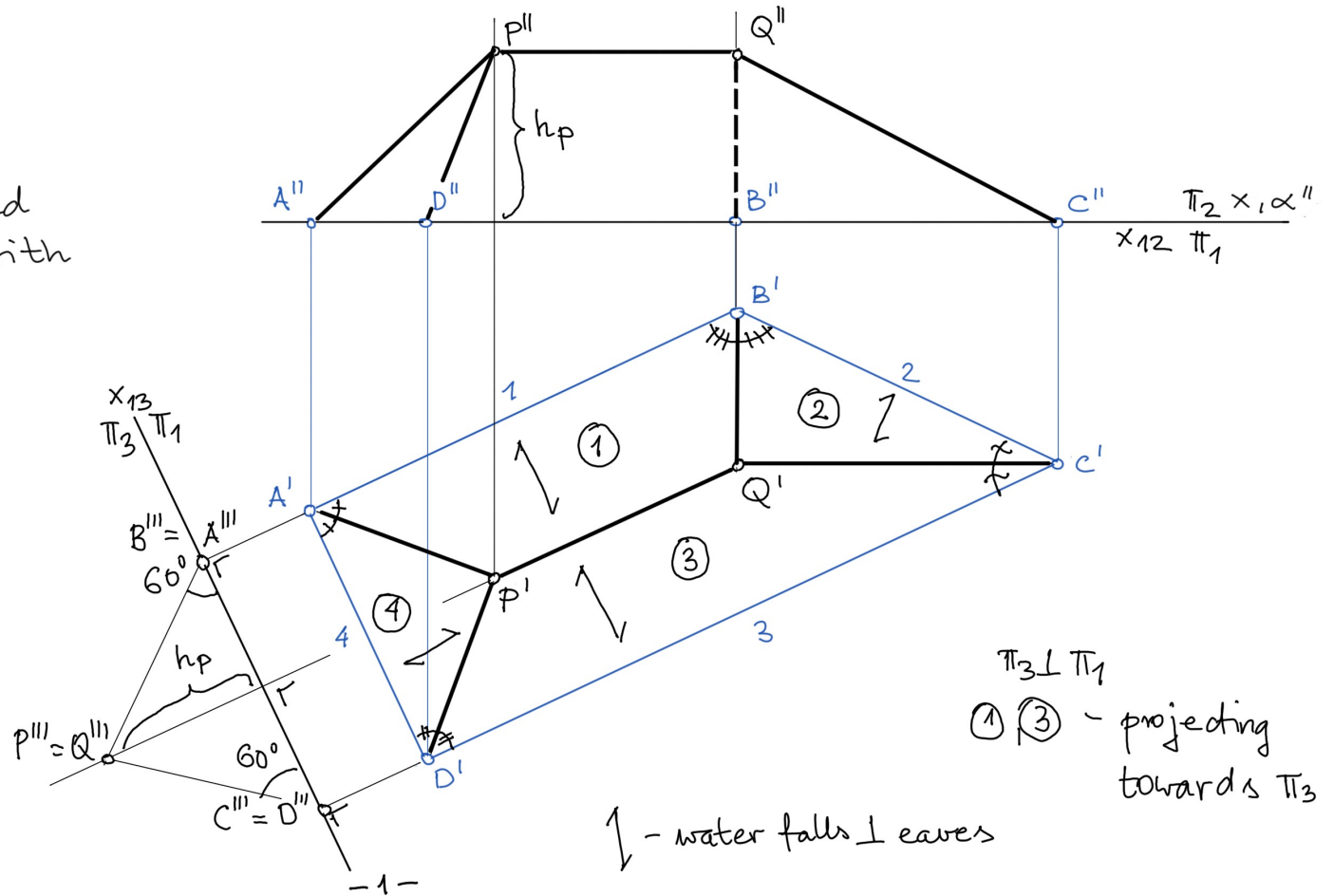
Draw the projections of a roof, whose hipped end roofs make 60° with the ceiling.

Solution:

$\left. \begin{matrix} AP \\ DP \\ BQ \\ CQ \end{matrix} \right\}$ corner ridges

PQ roof ridge

$\left. \begin{matrix} \textcircled{1} & \textcircled{3} \\ \textcircled{2} & \textcircled{4} \end{matrix} \right\}$ hipped ends

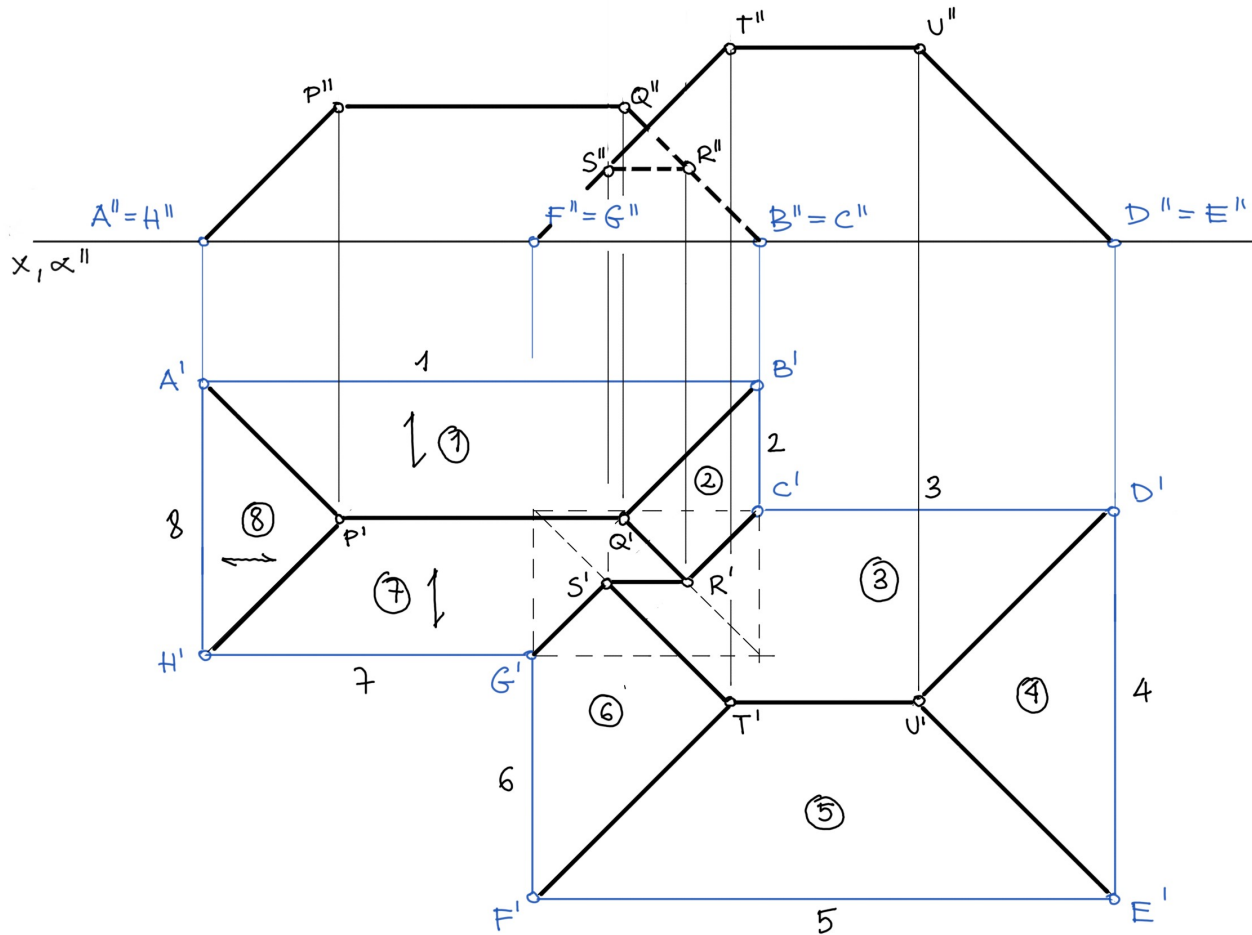


$\pi_3 \perp \pi_1$
 $\textcircled{1} \textcircled{3}$ - projecting towards π_3

\downarrow - water falls \perp eaves

Problem 2

Draw the projections of a roof, whose hipped roof ends make 45° with the ceiling.



Solution:

$\left. \begin{array}{l} AP \\ HP \\ BQ \\ DU \\ EU \\ FT \\ ST \\ QR \end{array} \right\}$ corner ridges

$\left. \begin{array}{l} GS \\ CR \end{array} \right\}$ valley ridges

$\left. \begin{array}{l} PQ \\ SR \\ TU \end{array} \right\}$ roof ridges

dashed lines symbolize virtual eaves and ridges