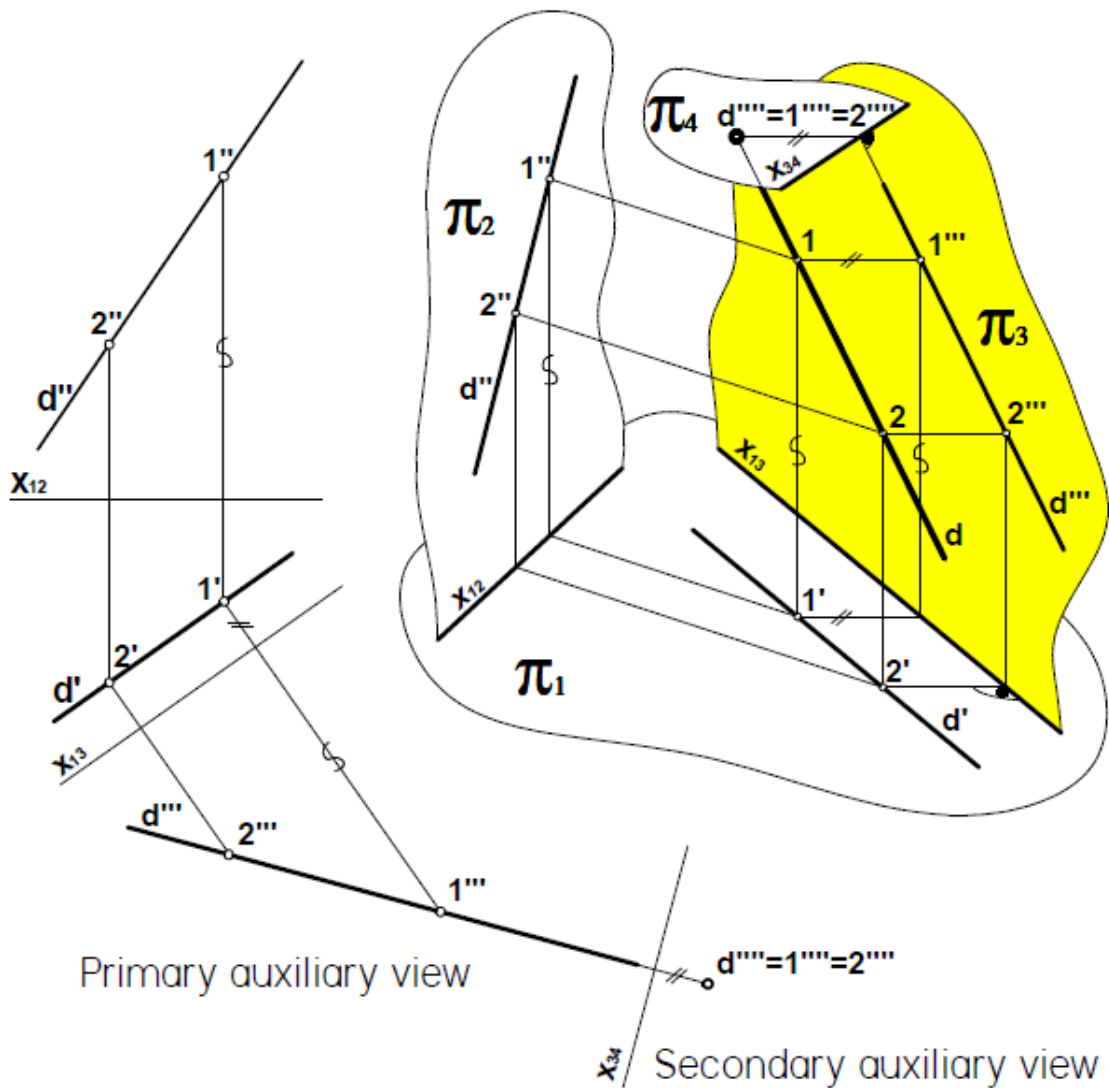


TRANSFORMATION

PROBLEMS						
31	32	33	34	35	36	37

REPRESENTATION OF A NON-PARTICULAR STRAIGHT LINE USING TWICE TRANSFORMED PROJECTION PLANE (TWO AUXILIARY VIEWS)

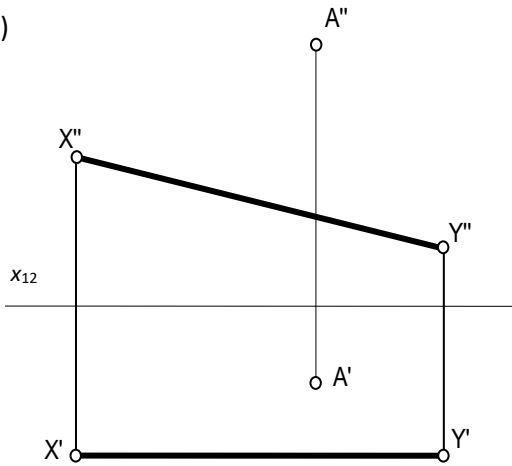


If $\pi_3 \perp \pi_1$ and $\pi_3 \parallel d$ then $x_{13} \parallel d'$

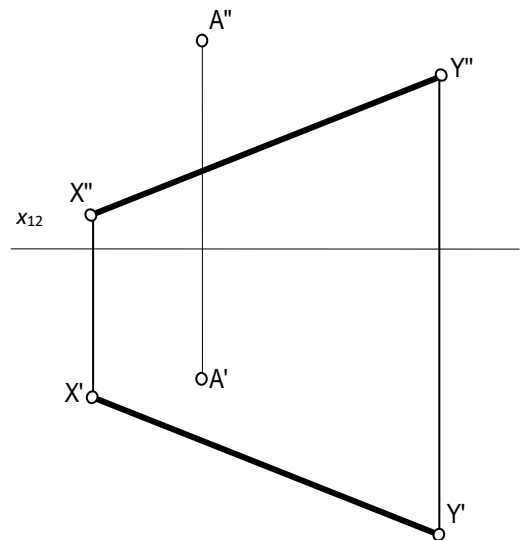
If $\pi_4 \perp \pi_3$ and $\pi_4 \perp d$ then $x_{34} \perp d''''$

31. **XY** is the centerline of a mining tunnel. From point **A** on the surface of the ground, a ventilating shaft is to be sunk to the tunnel. Determine the true length of the shortest possible ventilating shaft and show it in all views. Consider two cases:

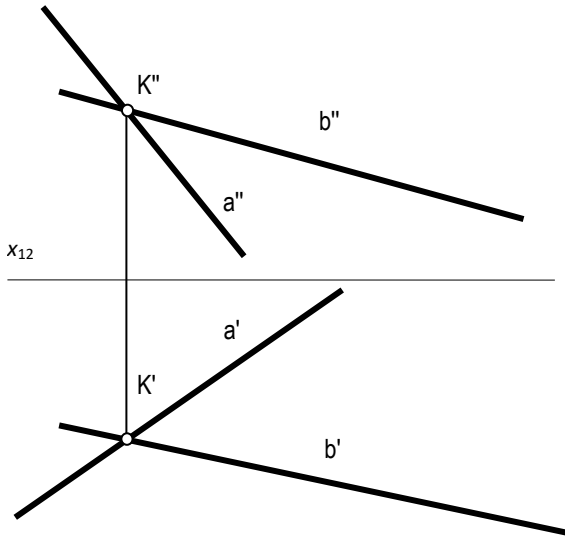
a)



b)

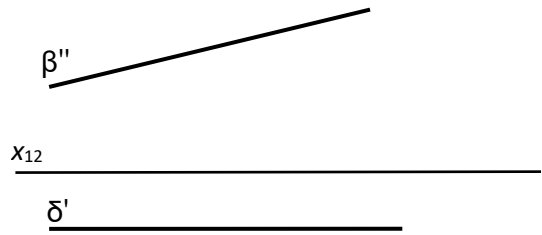
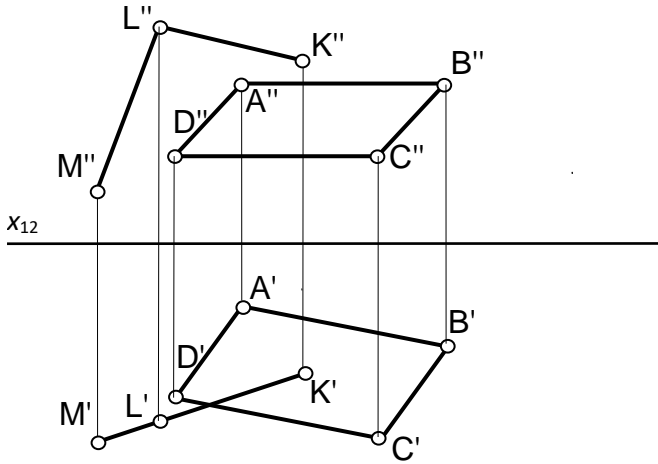


32. Find a bisector line between two lines **a** and **b** intersecting in point **K**. Use a horizontal line **p**.

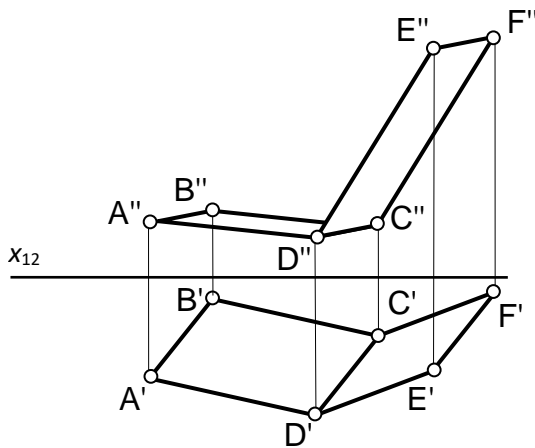


33. Find the true distance **KE**, between end effector **K** of manipulator **KLM** and control panel **ABCD**, $AB \parallel CD \parallel \pi_1$.

34. Find the dihedral angle between two intersecting planes β and δ , $\delta \parallel \pi_2$.

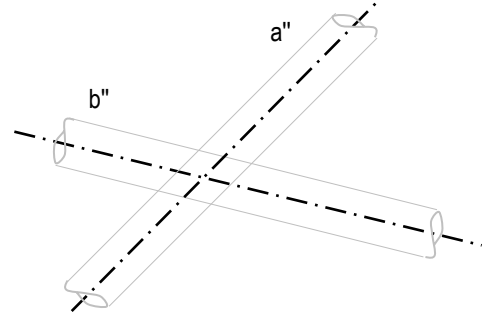


35. Determine the measure of the recline angle (between plates **ABCD** and **CDEF**) of the given seat model

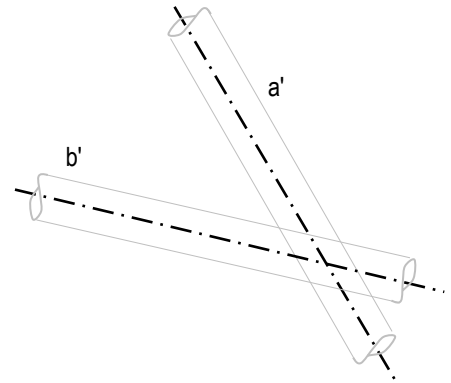


 Homework

36. Two sewer pipes are determined by their axes **a** and **b**. Determine the location and true length of the shortest possible connecting pipe bearing (the segment of its axis between axes of these sewer pipes).



X₁₂



37 Find the missing view of the **DE** segment, knowing that it belongs to plane β parallel to plane $\alpha(a, b)$ at the distance of 10mm. How many solutions of the problem exist?

