

画法几何

与建筑工程制图习题集

HUAFÄ JIHE YU JIAN ZHU GONGCHENG
ZHITU XITIJÍ

汪颖 李娟 主编

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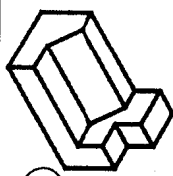
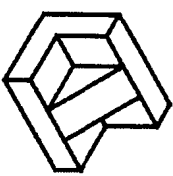
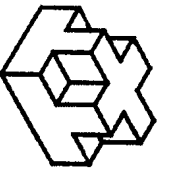
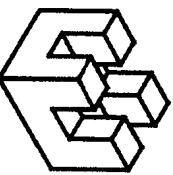
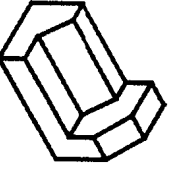
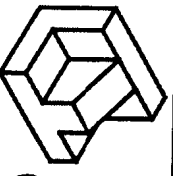
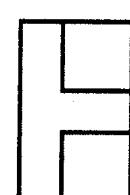
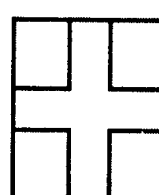
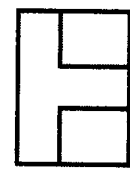
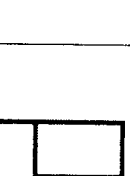
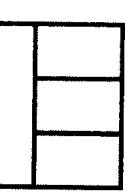
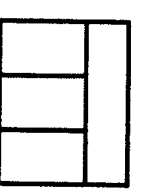
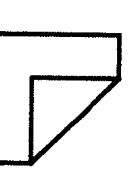
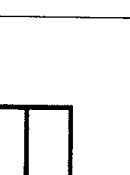

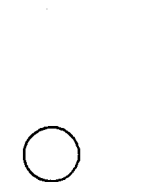
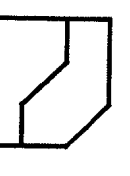

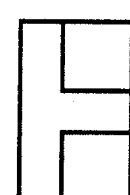
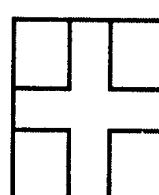
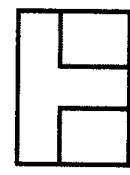
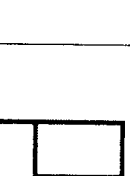
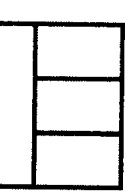
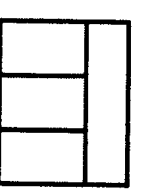
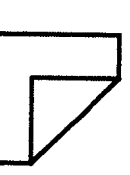
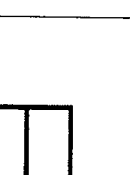

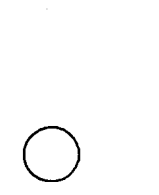
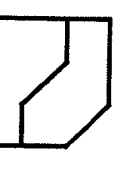

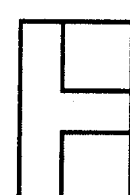
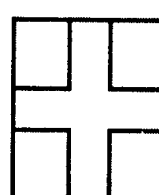
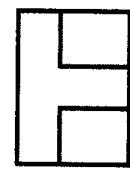
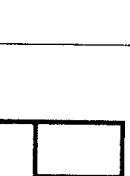
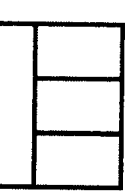
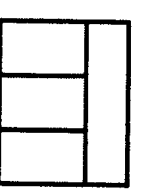
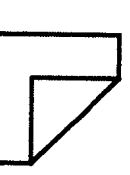
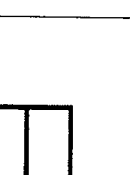

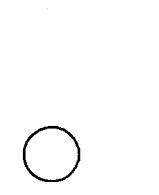
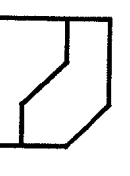

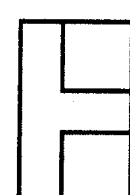
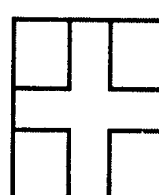
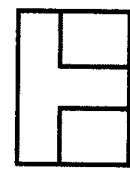
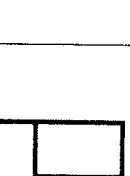
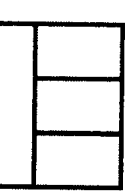
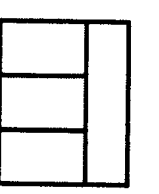
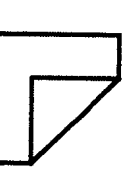
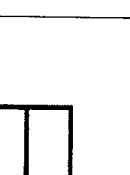

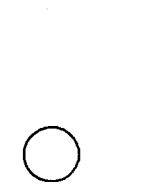
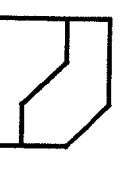

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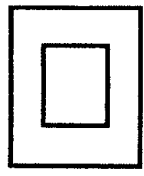
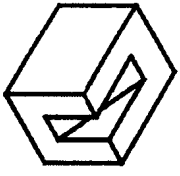
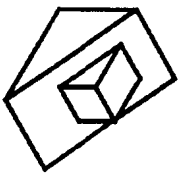
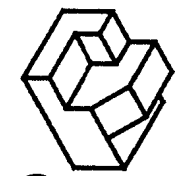
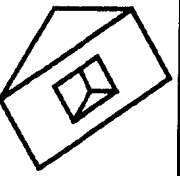
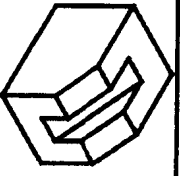
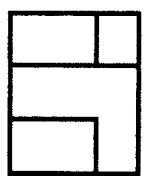
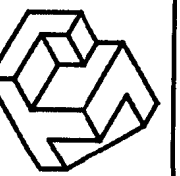
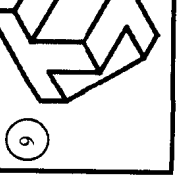
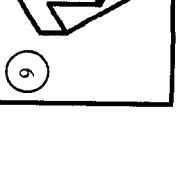
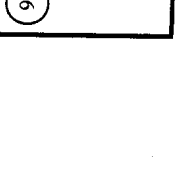

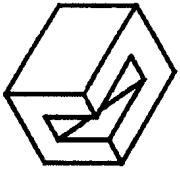
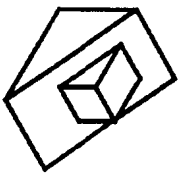
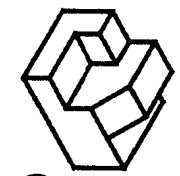
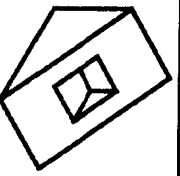
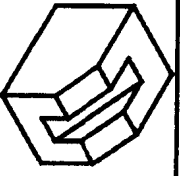
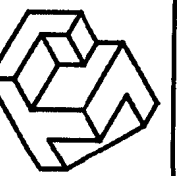
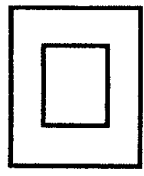
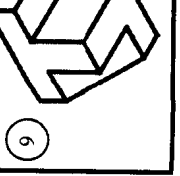
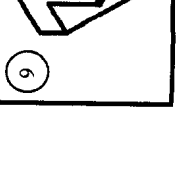
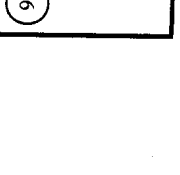


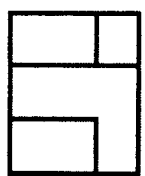
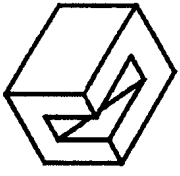
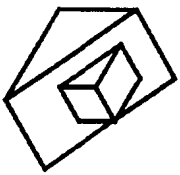
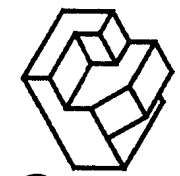
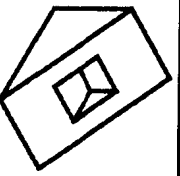
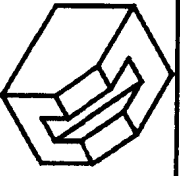
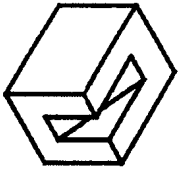
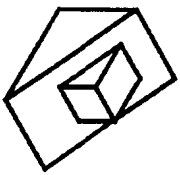
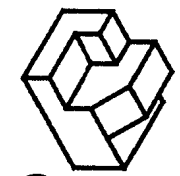
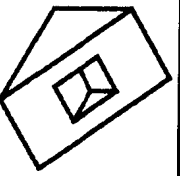
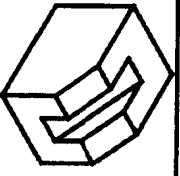
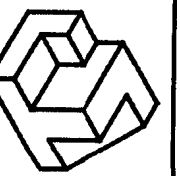
说 明

一、本习题集与汪颖、龚伟主编的《画法几何与建筑工程制图》配套使用。为便于教学，习题集的编写顺序与教材一致。

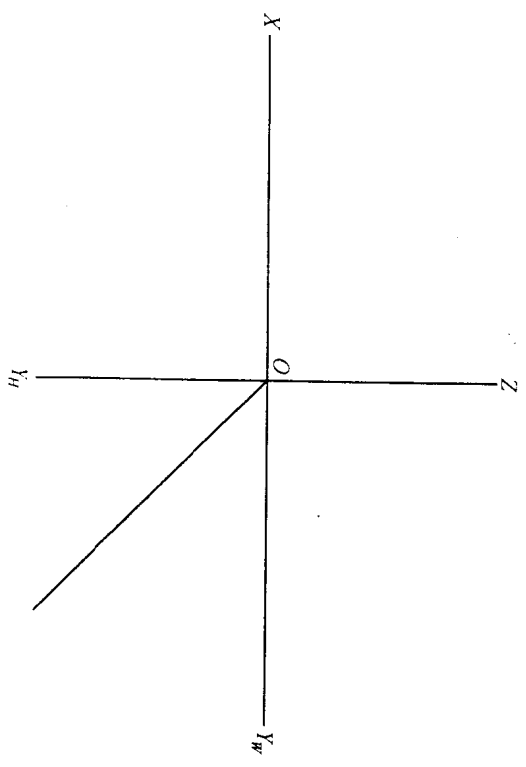
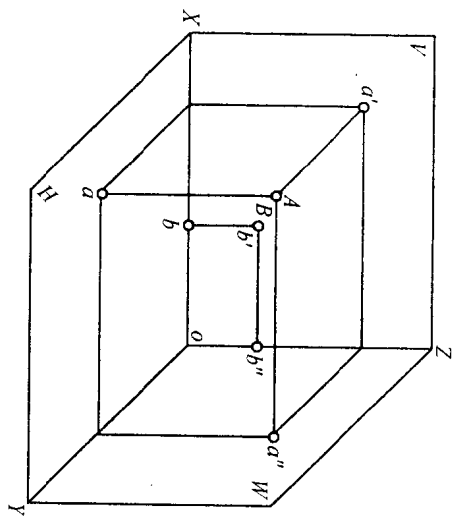
二、本习题集由汪颖、李娟主编。参加编写工作的有：龚伟（根据立体图投投影图（一、二）、点的投影、直线的投影、平面的投影、直线与平面、平面与平面的相对位置、平面与立体相交、直线与立体相交），李娟（换面法、制图基本知识、结构施工图、室内给排水工程图），汪颖（平面立体、曲线与曲面、两立体相交、轴测投影、组合体的投影、表达方法、建筑施工图），宋琳（计算机绘图）。

本习题集的编写得到了许多老师的帮助和支持，谨此表示谢意。限于我们的业务水平和教学经验，不妥之处恳切希望使用本习题集的教师和读者提出批评指正。

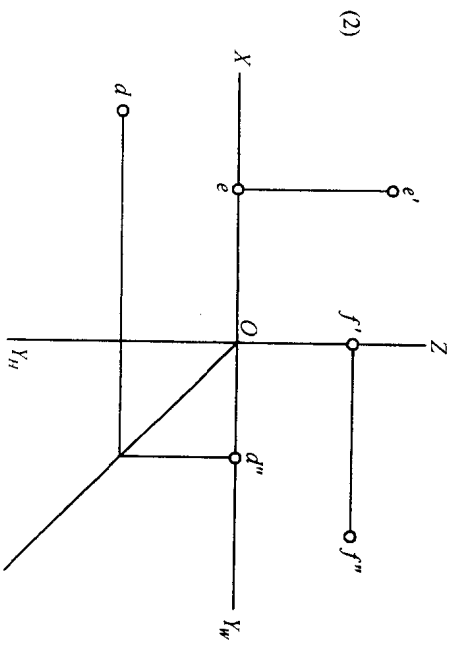
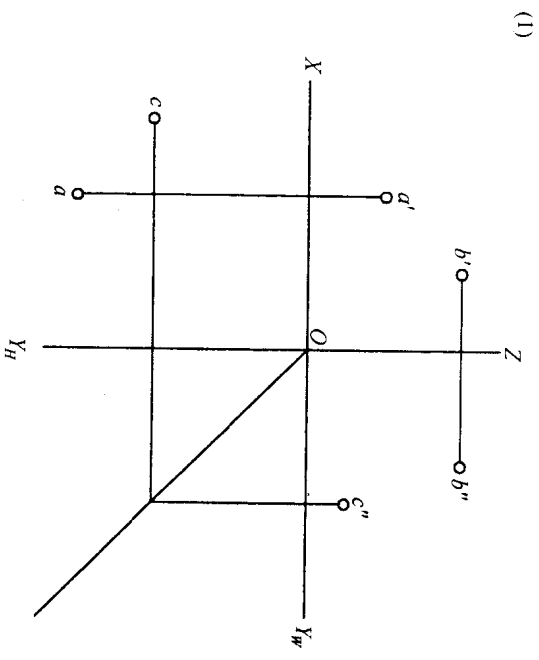
<p>根据立体图找投影图(一)</p>	<p>班级</p>	<p>姓名</p>	<p>学号</p>	<p>1</p>
 <p>①</p>  <p>②</p>  <p>③</p>  <p>④</p>  <p>⑤</p>  <p>⑥</p>	           	           	           	           

根据立体图找投影图(二)	班级	姓名	学号	2
 				
 				
 				
 				
 				
 				

1-1 根据 A、B 两点的直观图画出三面投影。



1-2 已知各点的两面投影，补画第三面投影。



点的投影

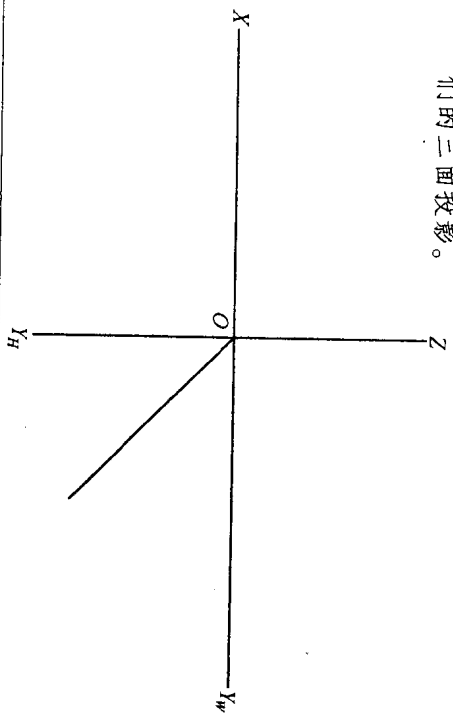
班级

姓名

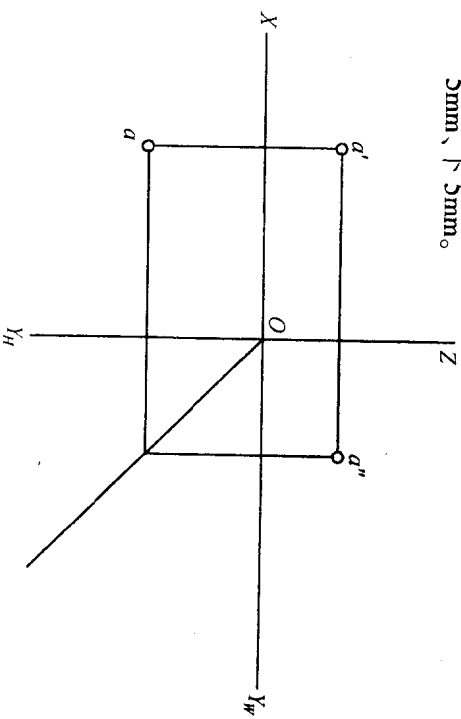
学号

3

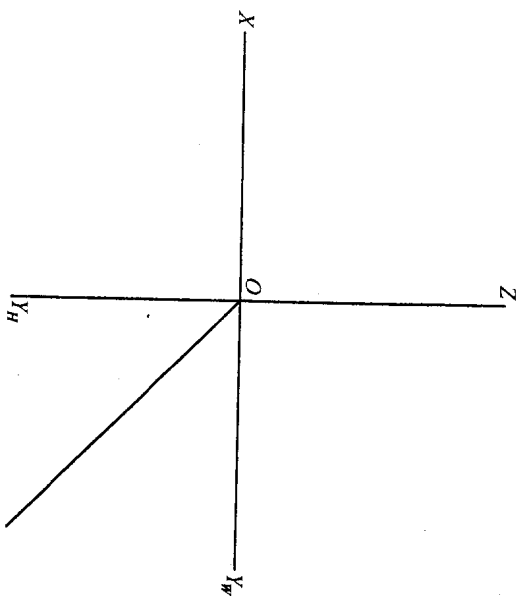
1-3 已知 $A(20, 25, 20)$, $B(25, 15, 0)$, $C(30, 0, 10)$, 作出它们的三面投影。



1-4 已知 A 点的投影, 求作 B 点的投影。 B 点在 A 点左 10mm 、前 5mm 、上 10mm ; C 点在 A 点右 15mm 、后 5mm 、下 5mm 。



1-5 已知 A 点距 V 面 20mm , 距 H 面 25mm , 距 W 面 30mm ; B 点距 V 面 10mm , 距 W 面 10mm , 在 H 面上。 C 在 OX 轴上, 距 W 面 20mm , 求它们的投影。



点的投影

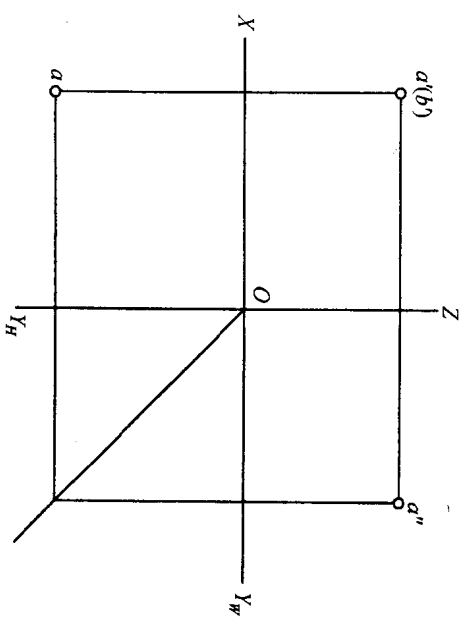
班级

姓名

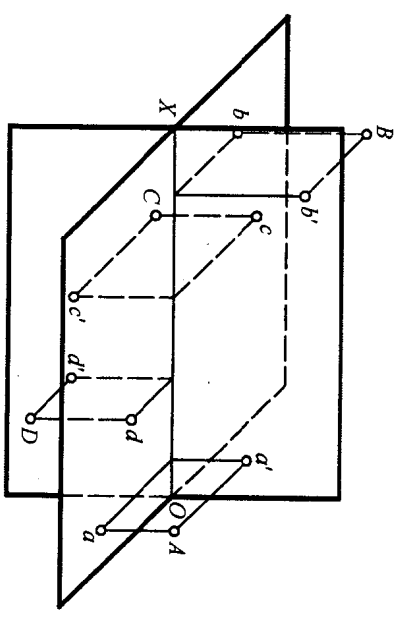
学号

4

1-6 已知 A 、 B 两点是一对 V 面重影点，相距 10mm ； A 、 C 两点是一对 H 面的重影点， C 在 H 面上； D 点在 H 面上，且在 C 后 15mm ，右 15mm 处，求 B 、 C 、 D 三点的三面投影，并判别重影点的可见性。



1-7 根据各点的直观图，画出其两面投影，并判断各点位于哪个分角。



X _____
O _____

点 A 在第 () 分角； 点 C 在第 () 分角；
点 B 在第 () 分角； 点 D 在第 () 分角。

点的投影

班级

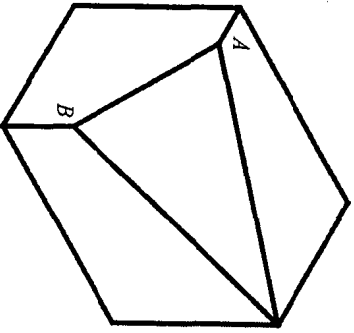
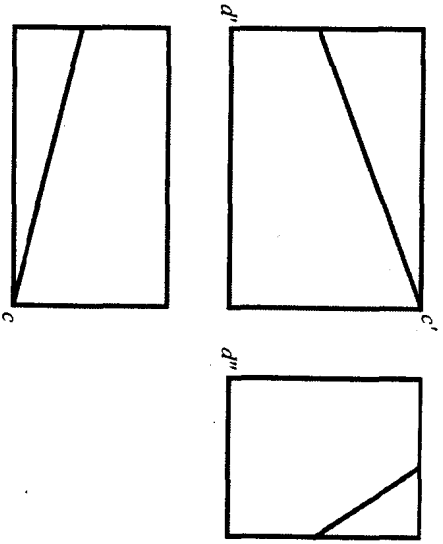
姓名

学号

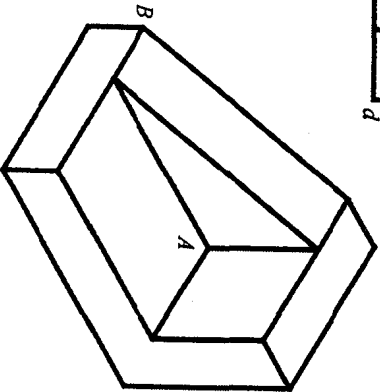
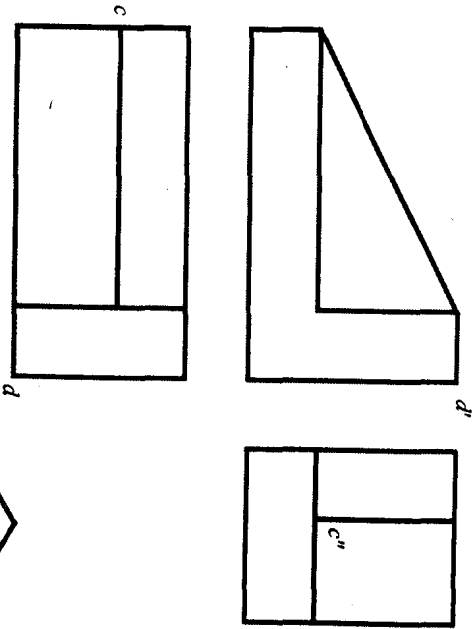
5

1-8 在形体的三面投影上,标出A、B两点的投影位置,补出C、D两点所缺投影,并在立体图上标出C、D两点的位置。

(1)



(2)



点的投影

班级

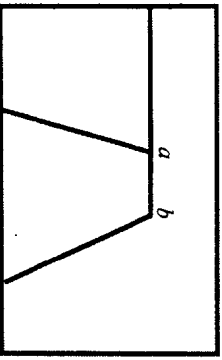
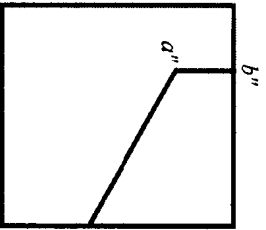
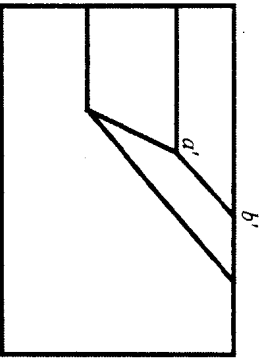
姓名

学号

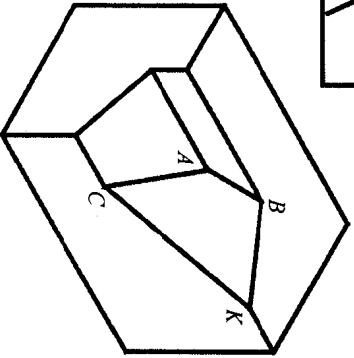
6

2-1 在立体的投影图上,标出直线的三个投影,并说明其对投影面的相对位置(参照立体图)。

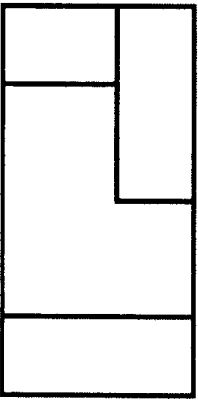
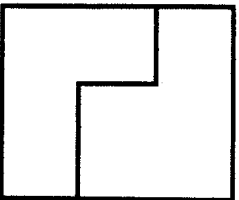
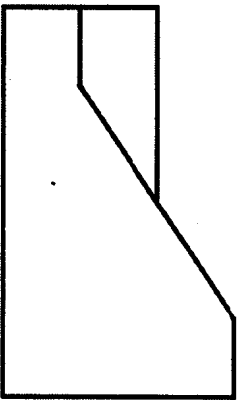
(1)



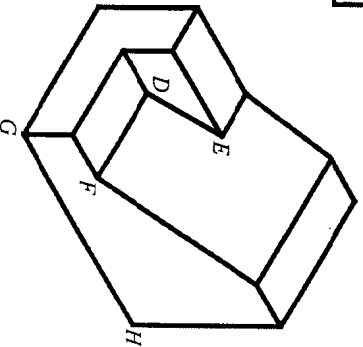
AB是 正平 线;
BK是 侧垂 线;
AC是 侧平 线。



(2)



DE是 正平 线;
DF是 侧垂 线;
CH是 侧平 线。



直线的投影

班级

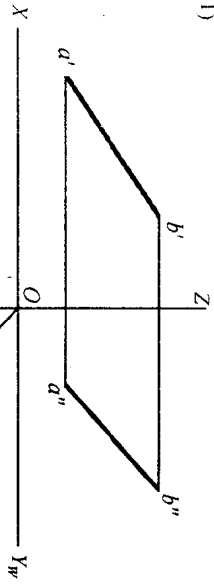
姓名

学号

7

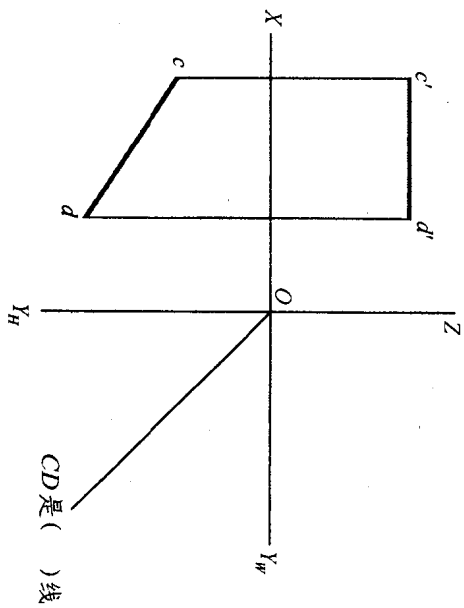
2-2 求直线的第三投影,并判断其对投影面的相对位置。

(1)



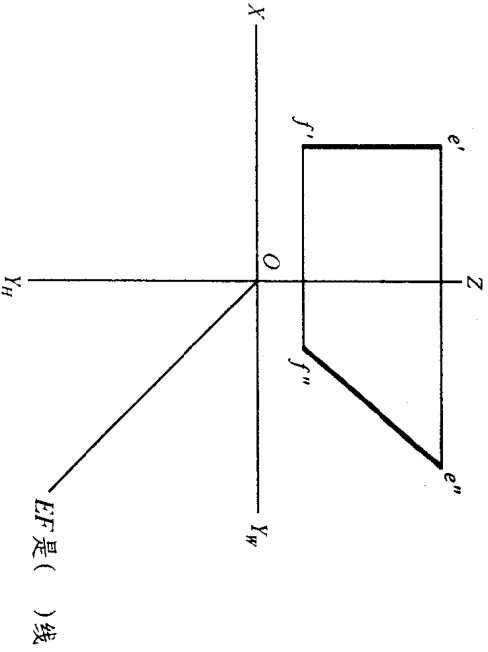
AB是()线

(3)



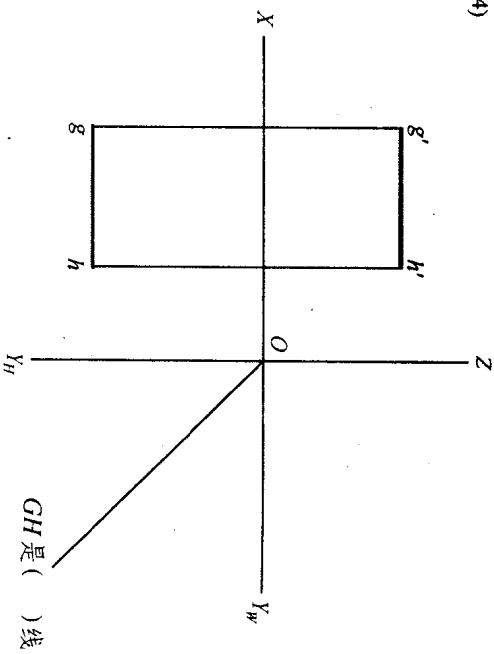
CD是()线

(2)



EF是()线

(4)



GH是()线

直线的投影

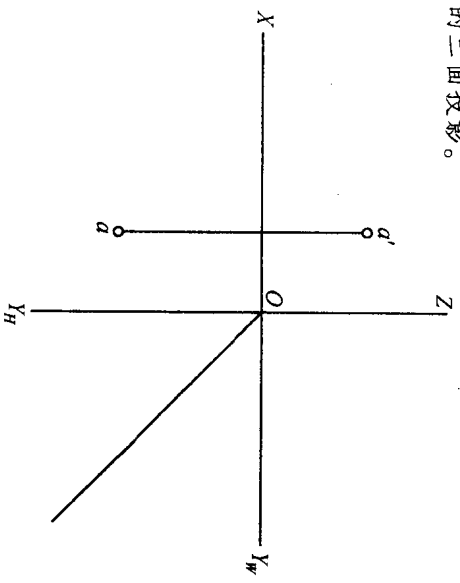
班级

姓名

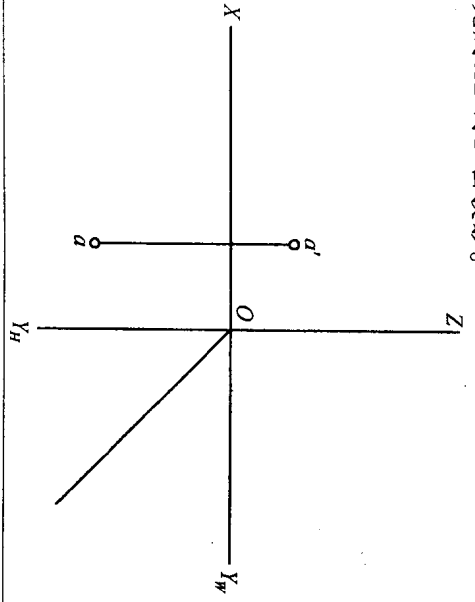
学号

8

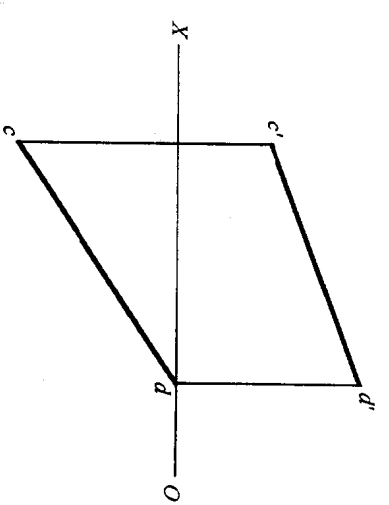
2-3 已知 $AB // H$ 面, $\beta = 45^\circ$, B 在 A 左后方的 V 面上。完成 AB 的三面投影。



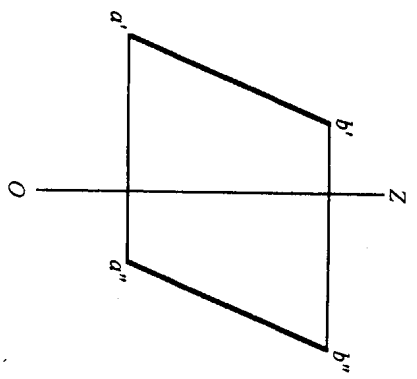
2-4 已知 $AB // V$ 面, $\gamma = 30^\circ$, $AB = 25\text{mm}$, 点 B 在点 A 的左上方。完成 AB 的三面投影。



2-5 试求线段 CD 的实长及对 H 面的倾角 α_0 。



2-6 试求线段 AB 对 W 面的倾角 γ_0 。



直线的投影

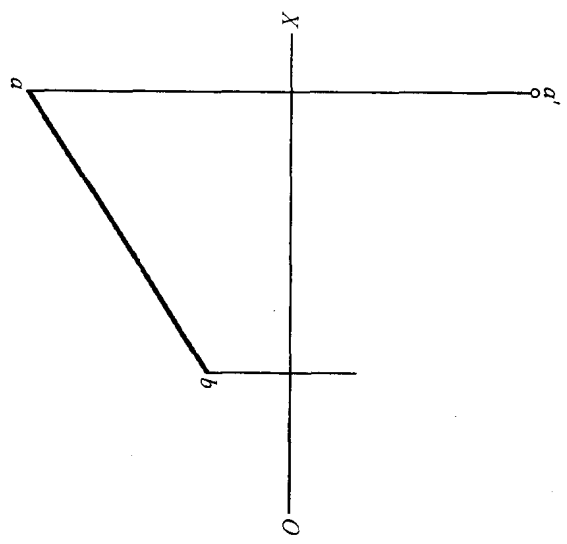
班级

姓名

学号

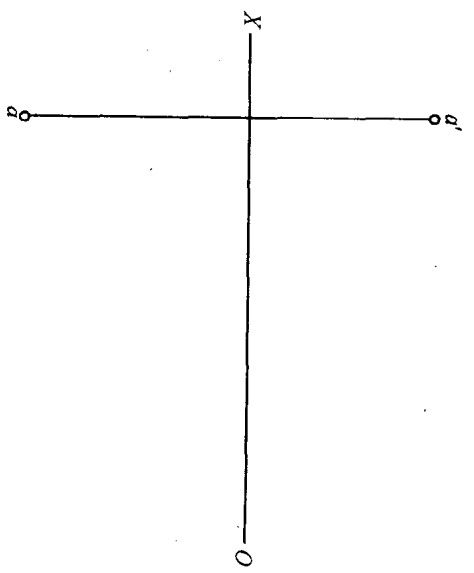
9

2-7 已知 AB 对 V 面的倾角 $\beta=30^\circ$ ，完成 AB 的正面投影。



有 _____ 解

2-8 已知 $AB=30\text{mm}$ ， $\alpha=45^\circ$ ， $\beta=30^\circ$ ， B 在 A 右前上方。完成 AB 的两面投影。



直线的投影

班级

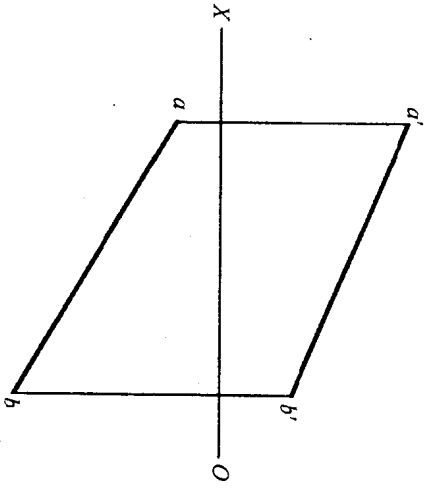
姓名

学号

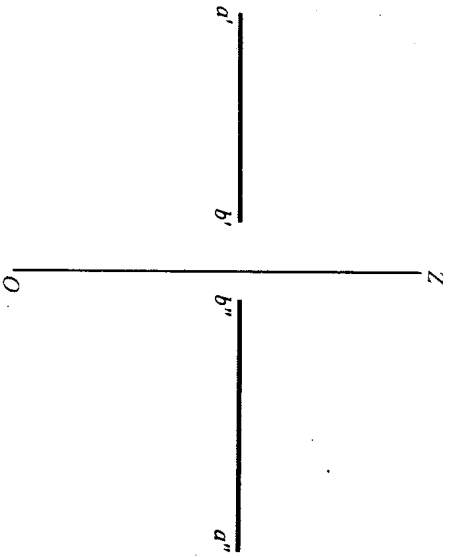
10

2-9 在直线 AB 上取 C 点,使 C 点距 V 面 20mm 。

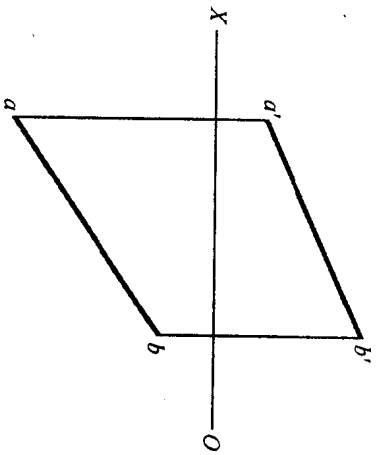
(1)



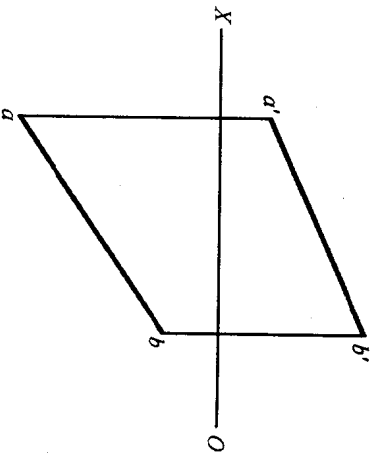
(2)



2-10 已知点 C 位于直线 AB 上, $AC=20\text{mm}$, 求点 C 的两面投影。

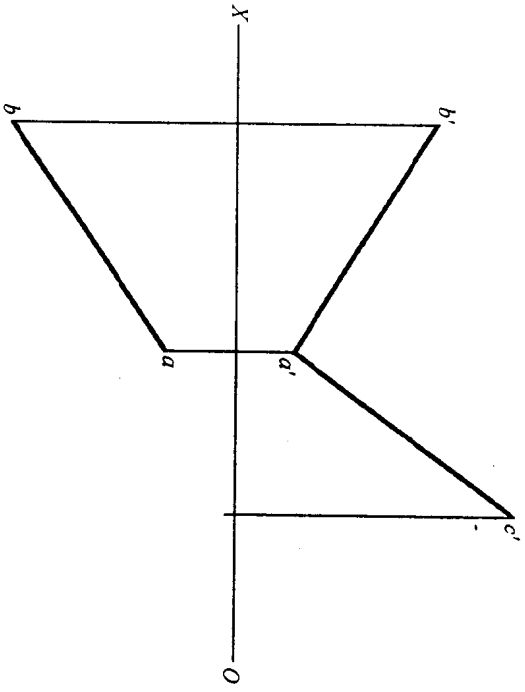


2-11 在直线 AB 上取两点 M 、 N , 且使 M 位于 H 面内, N 位于 V 面内。

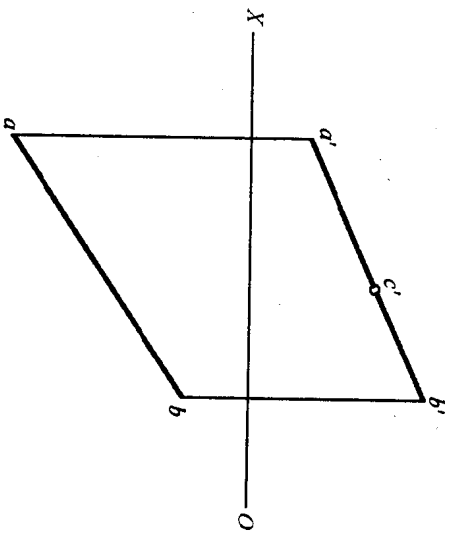


2-12 已知直线 $AB=AC$, 求 ac 。

(1)



(2)



直线的投影

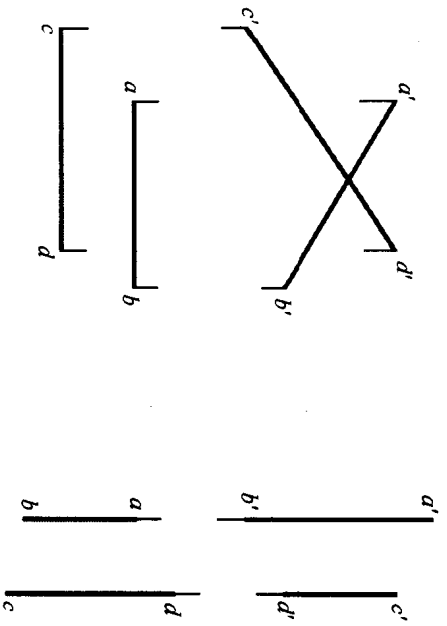
班级

姓名

学号

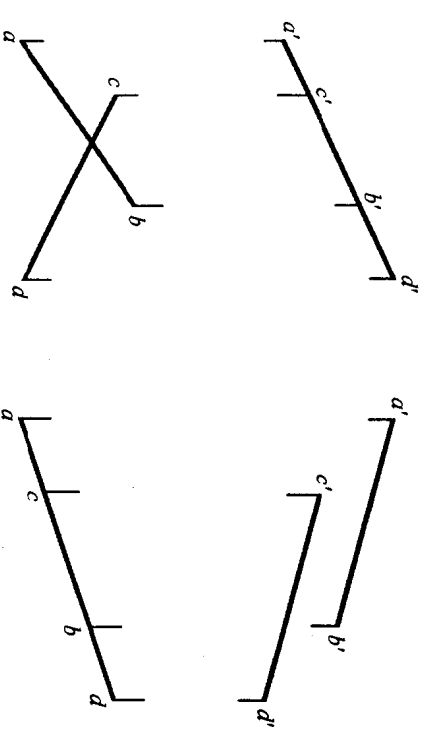
12

2-13 判断下列两直线的相对位置。



两直线 _____

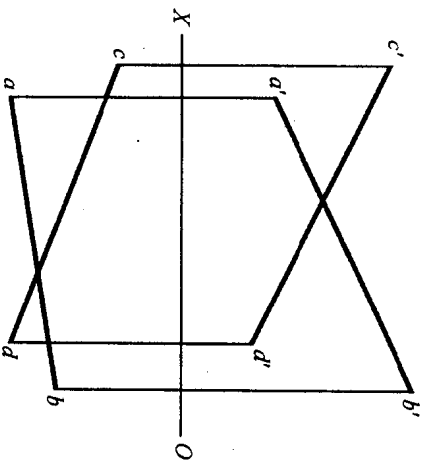
两直线 _____



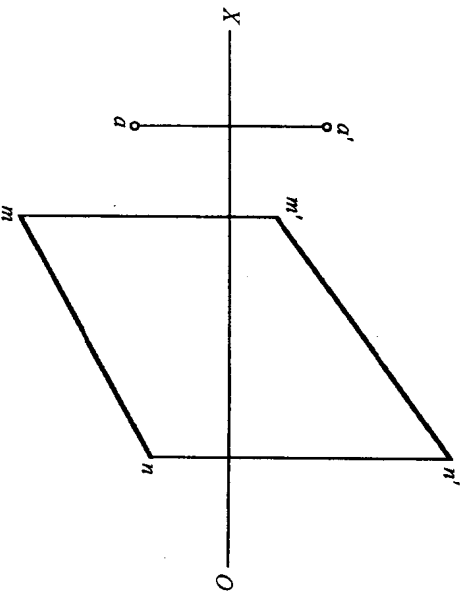
两直线 _____

两直线 _____

2-14 求作交叉两直线的重影点的投影。



2-15 过A点分别作水平线和正平线与MN直线相交。



直线的投影

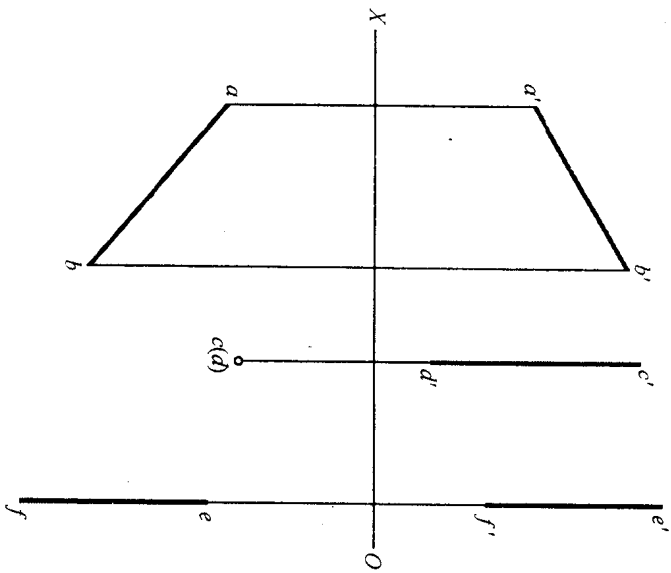
班级

姓名

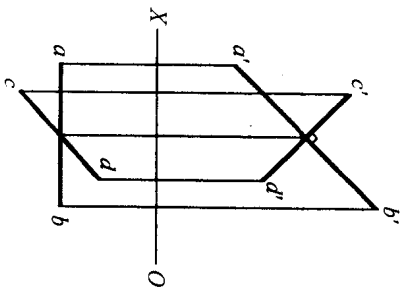
学号

13

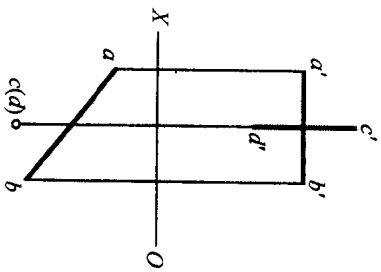
2-16 作直线 MN , 使它与直线 AB 平行, 并与直线 CD 、 EF 都相交。



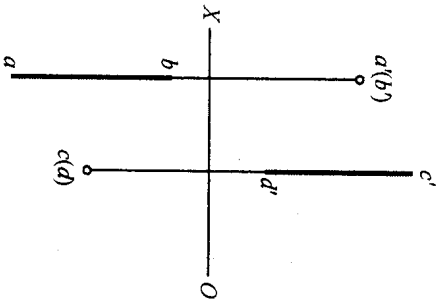
2-17 判断下列各组直线是否垂直(相交垂直, 交叉垂直)。



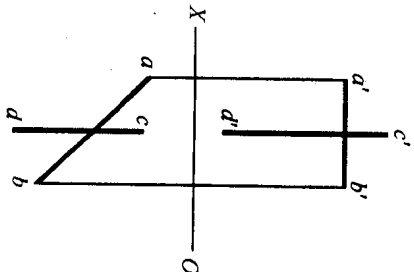
两直线_____



两直线_____



两直线_____



两直线_____

直线的投影

班级

姓名

学号