

工程制图习题本

(与《工程制图》教材配套使用)

卞正国 主 编

班 级 _____

姓 名 _____

TB23-44
72

教学改革试点专业试用教材

工程制图习题本

常州工业技术学院 卞正国 主编



机械工业出版社

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ABCDEFGHIJKLMNPQTZ

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abcd

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R3 2 × 45° M24-6H Φ60H7

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 $\Phi 15 \begin{matrix} 0 \\ -0.011 \end{matrix}$
 $\frac{II}{5:I}$
 $\frac{A \text{ 向旋转}}{2:I}$
 $\frac{6.3}{1.6}$
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技术要求自由尺硬称平行同心按精度核型最

其余镀寸设计审校比例数体视圈机大投图齿

械轮对共网纹均垫布钉张零装小母件面料第

模量宜深时材剖销线影配沉厚火斜宽竞制称

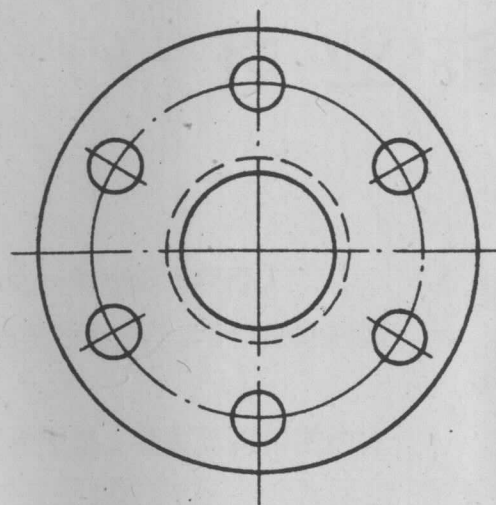
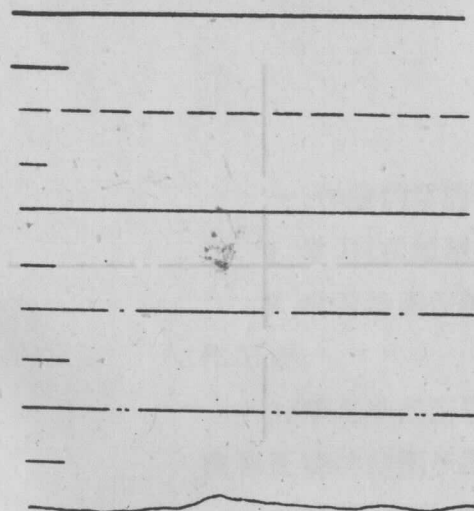
框局部泛平水铸铣璃锻柱沟钢链铅铍玻孔铁铰其保屋热顺

防能冲架侧伸吊顶闸球销余阀墙拱埋亮马全安过赛焊黄门

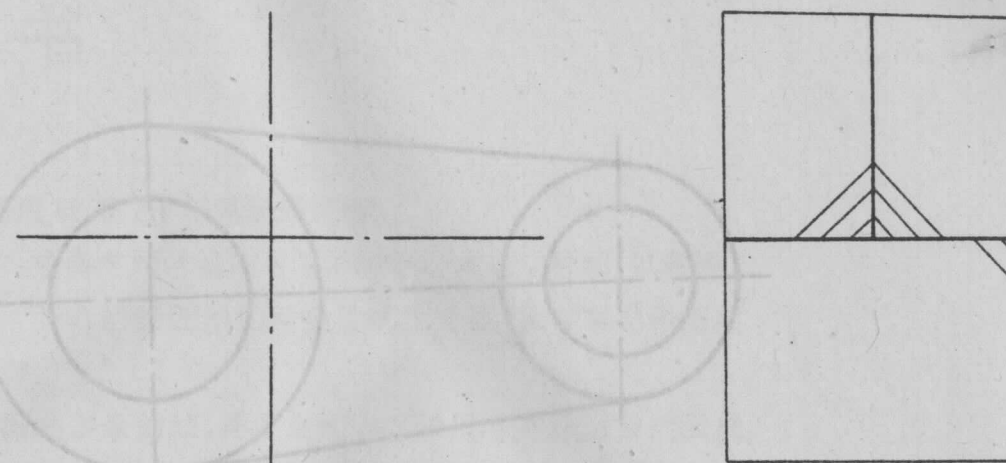
预石砂造斗页油体楼口筑环瓦百平地变克花防形子消管盖

压接青天护雨缩磨泵砌锥铜梯板梁理挂向铰找铤钻木材建

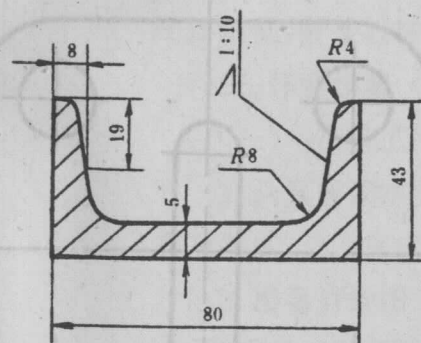
1. 在指定位置照样画出并补全各种图线。



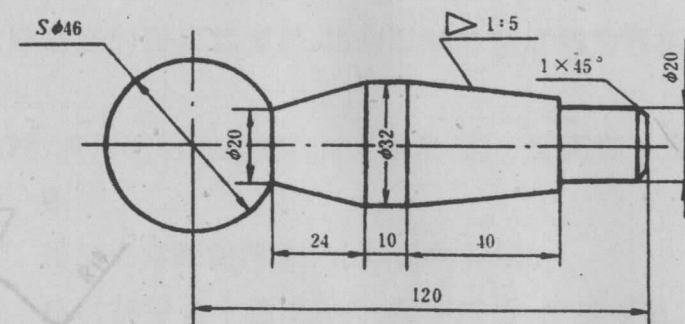
2. 度量下列图形并标注尺寸。(精确到毫米)



2. 参照所示图形,用 1:1 的比例画出图形并标注尺寸及斜度。



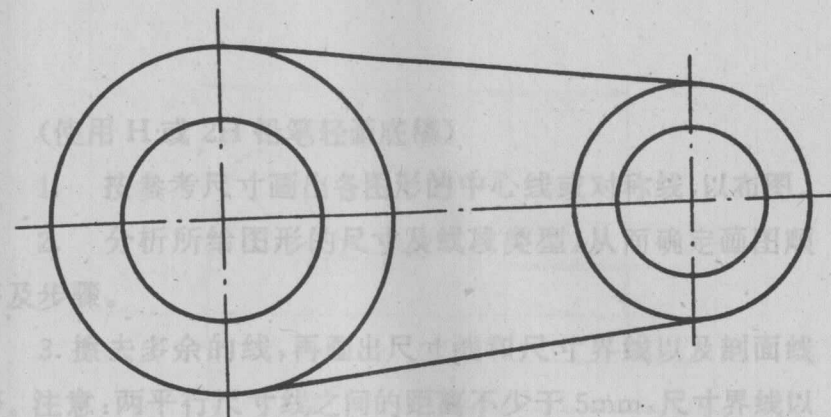
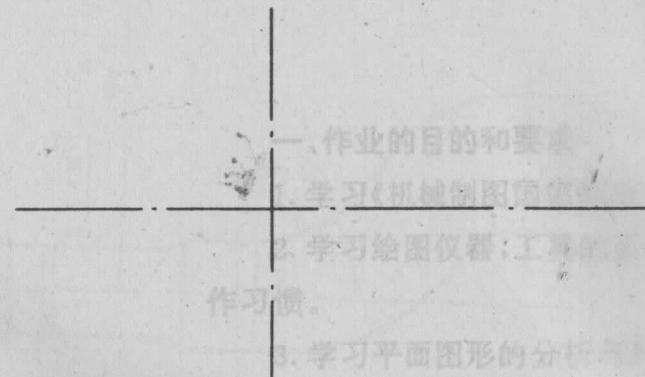
3. 参照所示图形,用 1:1 的比例在指定位置画出图形,并标注尺寸及锥度。



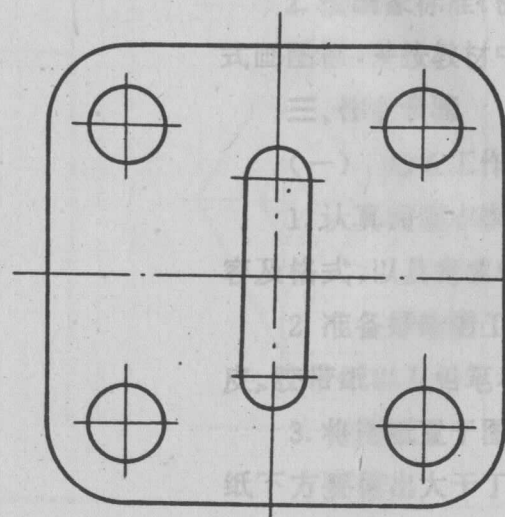
1. 用四心圆法画椭圆(已知椭圆长轴和短轴分别为 70mm 和 45mm)。

2. 度量下列图形并标注尺寸。(尺寸取整数)

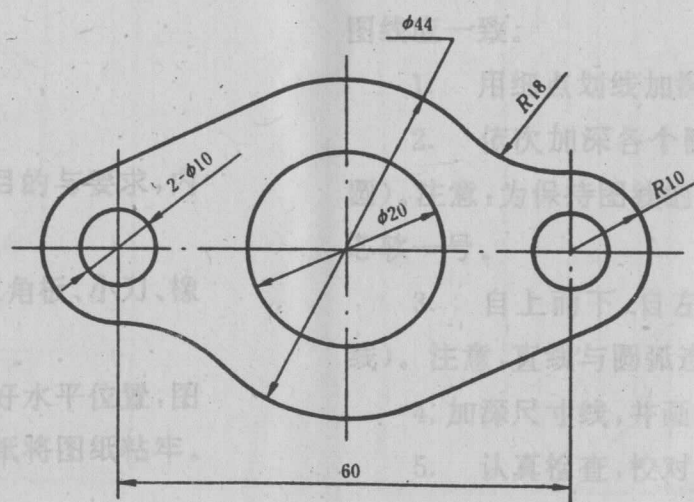
作业指示书



3. 度量下列图形并标注尺寸。



4. 抄画下列图形,并标注尺寸。



作业指示书

一、作业的目的和要求

1. 学习《机械制图国家标准》的一般规定与应用。
2. 学习绘图仪器,工具的正确使用和维护。培养良好的操作习惯。
3. 学习平面图形的分析与尺寸注法。掌握几何作图的方法和正确的绘图步骤。
4. 布图合理,作图正确,线型分明,连接光滑,字体工整,图面整洁。

二、作业的内容及格式

1. 从 1—6 几何作图所给的两组图形中任选一组,用 1:1 的比例抄画在 A3 幅面的图纸上,并标注尺寸(图中,带括号的尺寸布置图形的参考尺寸,不必注在图样上)”。
2. 按国家标准《机械制图》规定的 A3 幅面图纸尺寸及格式画图框,并按教材中所给的格式画标题栏。

三、作业步骤

(一) 准备工作

1. 认真阅读本次作业指示书,明确作业的目的与要求,内容及格式,以及完成作业的方法与步骤。
2. 准备好绘图工具:绘图板、圆规、分规、三角板、小刀、橡皮、胶带纸以及铅笔和铅芯等。
3. 将图纸置于图板的左下方,用丁字尺对好水平位置,图纸下方要留出大于丁字尺宽度的空位,用胶带纸将图纸粘牢。然后画出图框和标题栏。

(二) 画底稿及其要求

(使用 H 或 2H 铅笔轻画底稿)

1. 按参考尺寸画出各图形的中心线或对称线,以布图。
2. 分析所给图形的尺寸及线段类型,从而确定画图顺序及步骤。
3. 擦去多余的线,再画出尺寸线和尺寸界线以及剖面线等。注意:两平行尺寸线之间的距离不少于 5mm,尺寸界线以超出尺寸箭头末端 2mm 左右,中心线或对称线以超出圆周和图形轮廓 5mm 左右。

(三) 加深底稿及其要求

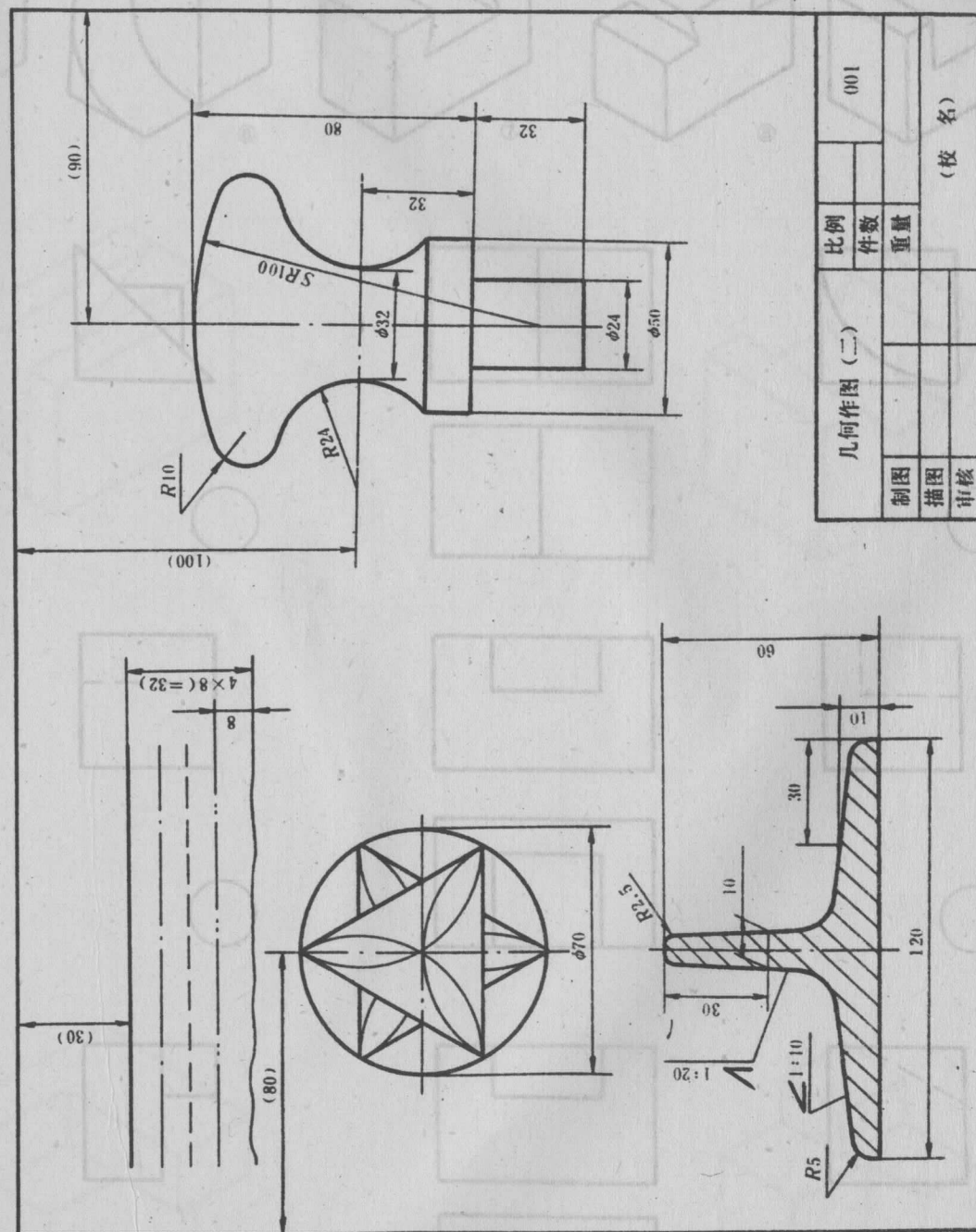
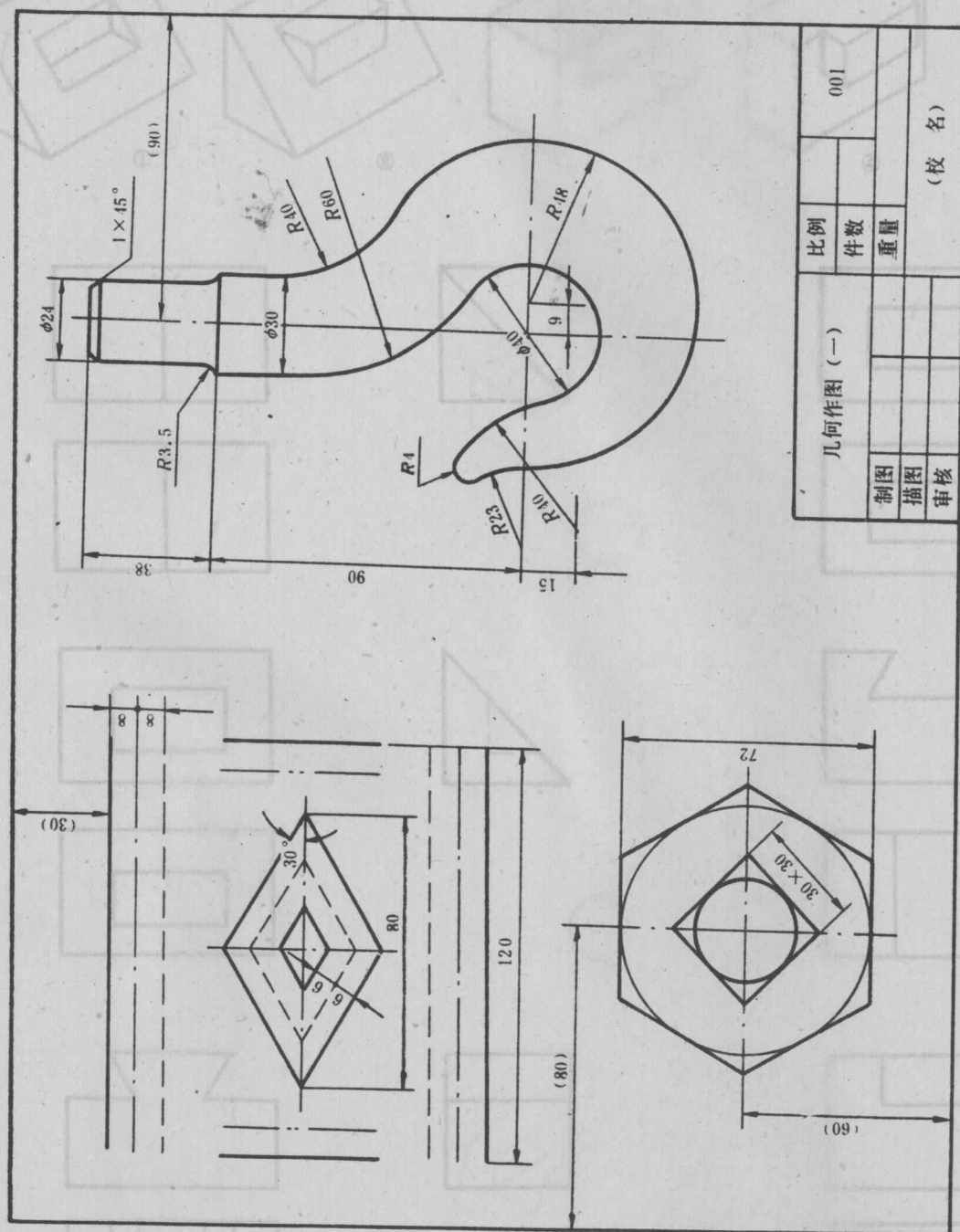
(使用 HB 或 B 铅笔)

选用适当的粗实线宽度,其他图线的宽度约为粗实线宽度的 1/3。

虚线,点划线的画法见教材。注意,同一张图样上的同类图线应一致。

1. 用细点划线加深各中心线及对称线。
2. 依次加深各个圆弧及圆(粗实线圆,细实线圆,虚线圆)。注意:为保持图线的一致,圆规中的铅芯应比画直线的铅芯软一号。
3. 自上而下,自左而右加深直线(粗实线、细实线、虚线)。注意,直线与圆弧连接处应光滑。
4. 加深尺寸线,并画箭头。
5. 认真检查,校对。

(四) 用标准字体填写尺寸数字及标题栏(使用 HB 铅笔)



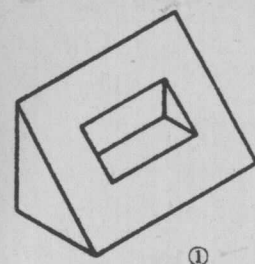
2-1 已知立体图及其号码, 分别找出相应的三视图, 并在小圆内注上号码。

班级

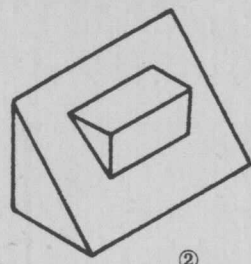
姓名

审核

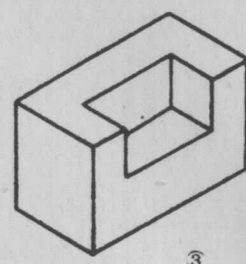
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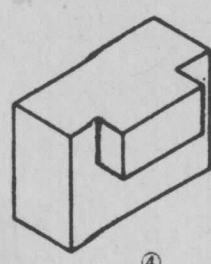
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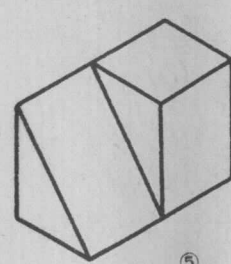
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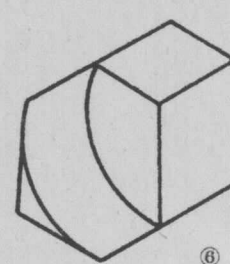
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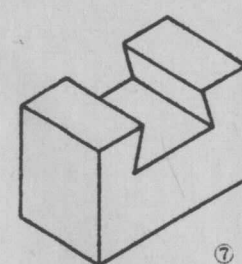
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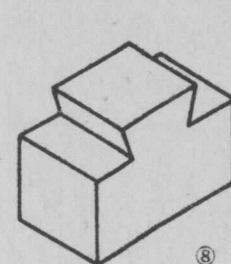
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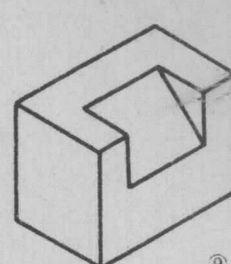
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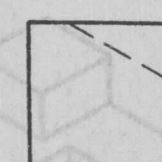
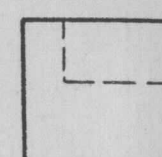
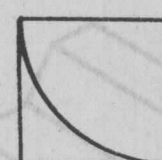
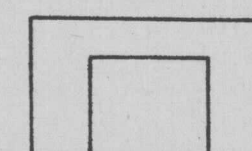
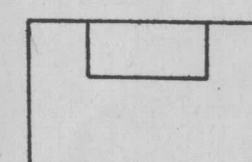
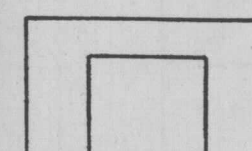
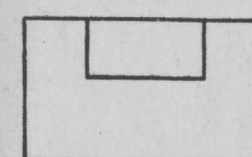
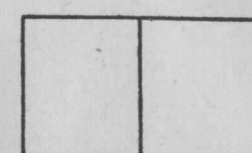
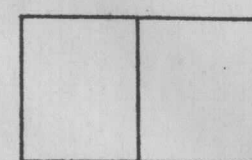
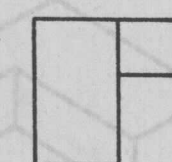
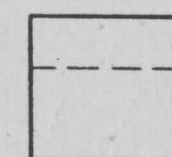
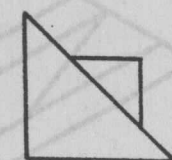
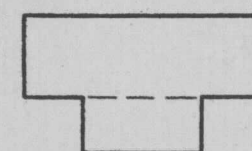
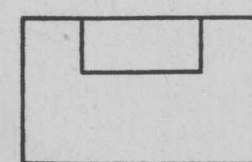
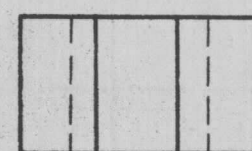
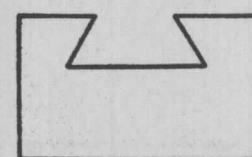
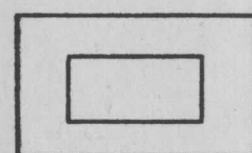
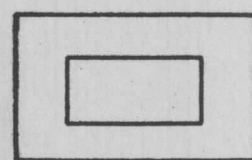
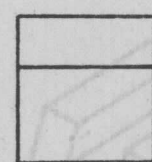
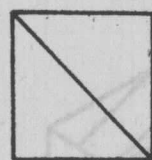
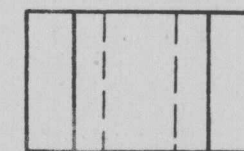
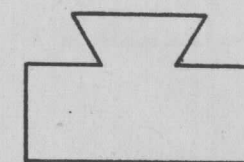
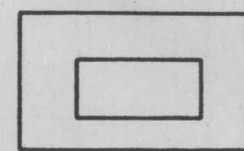
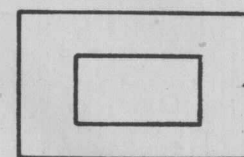
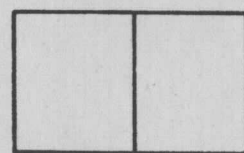
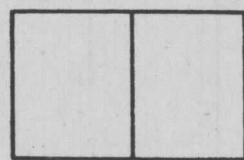
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⑧



⑨

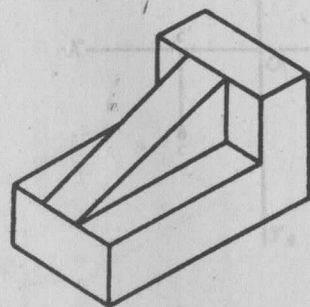
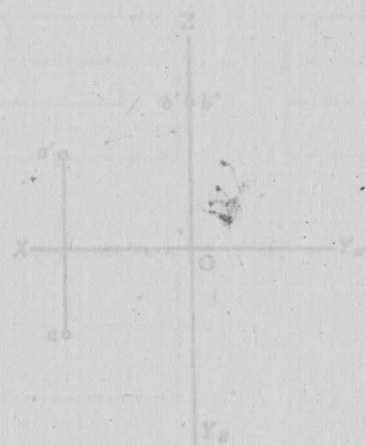


1. 已知点的两投影,求作第三投影。

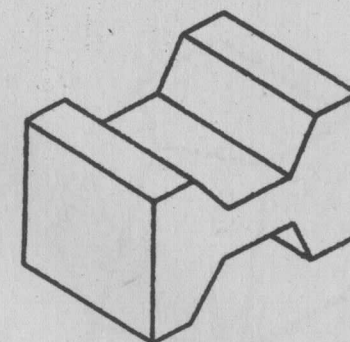
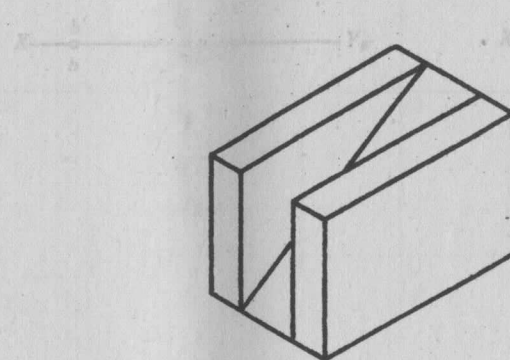
2.

3. 已知点的坐标,求作三投影。

(1)



(3)

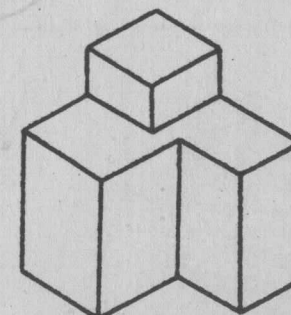
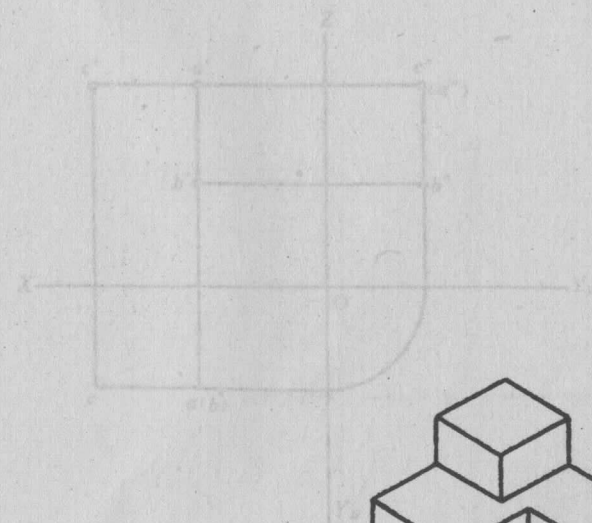
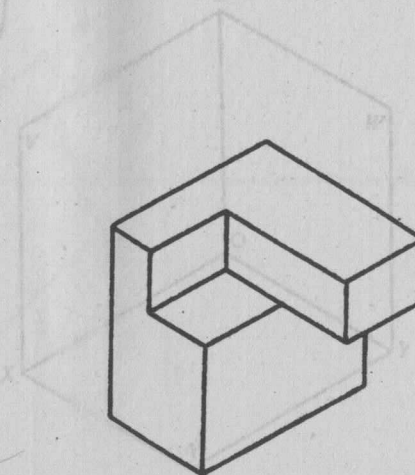
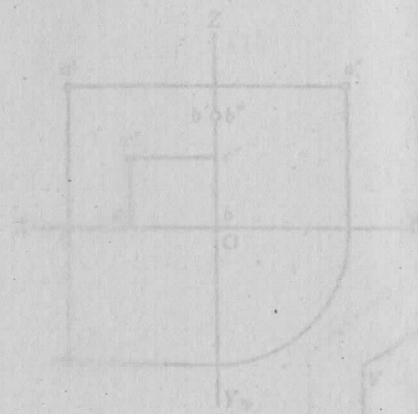
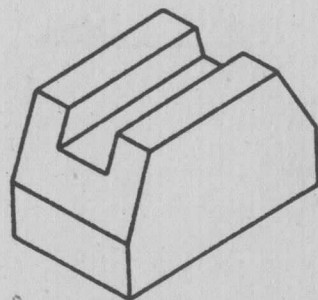
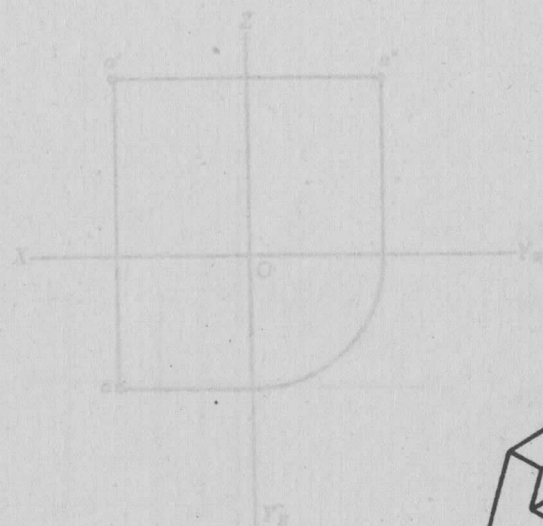


4. 已知A点的三投影,B比A低5,前5,左10,试作B点的三投影。

5.

已知A、B、C的三投影,求作它们的立体图。

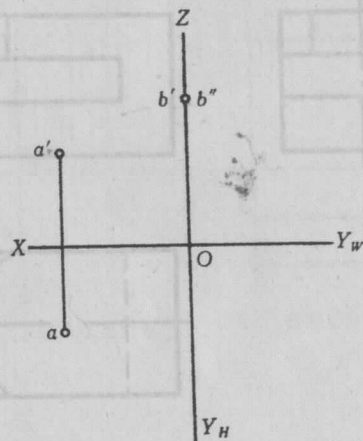
6. 试判断A、B两点的相对位置,不可见点投影加“()”。



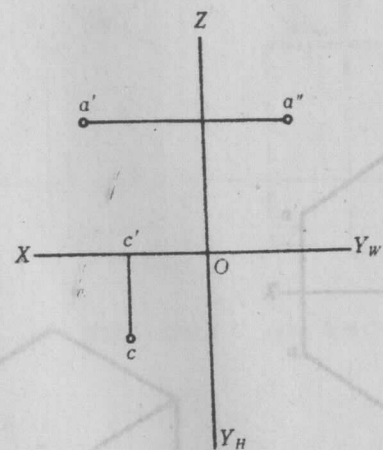
2. 已知点的坐标分别为 $A(15, 17, 15)$ 、 $B(0, 20, 20)$ 求作三投影。

1. 已知点的两投影, 求作第三投影。

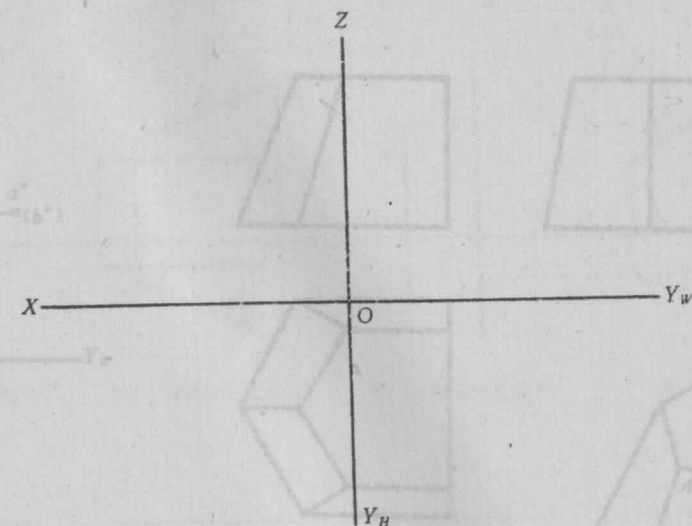
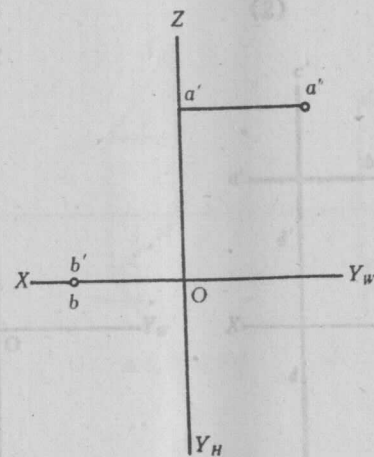
(1)



(2)



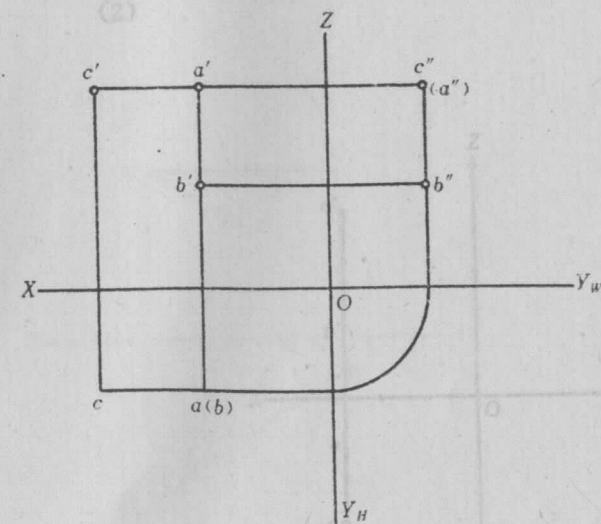
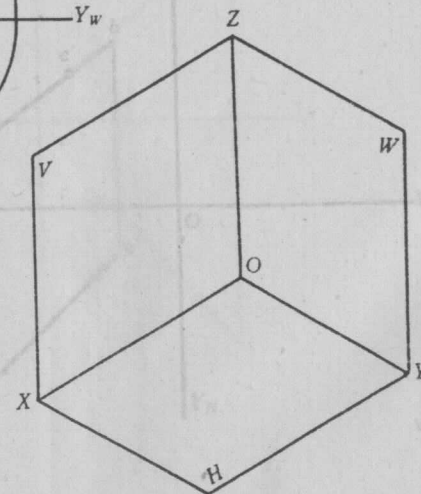
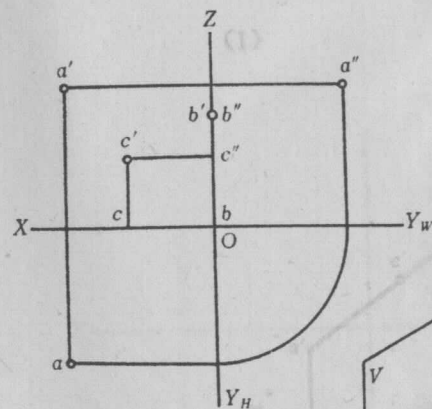
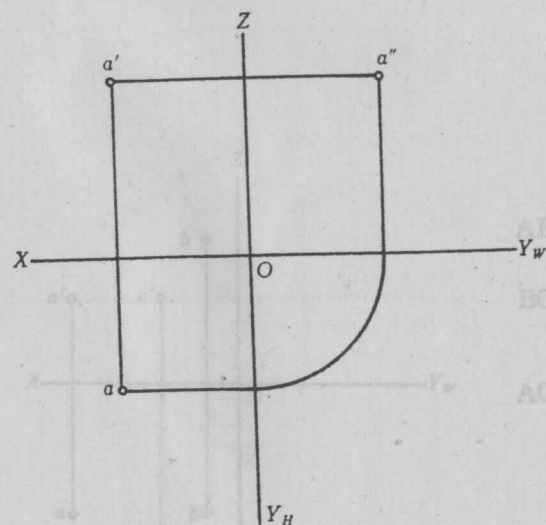
(3)



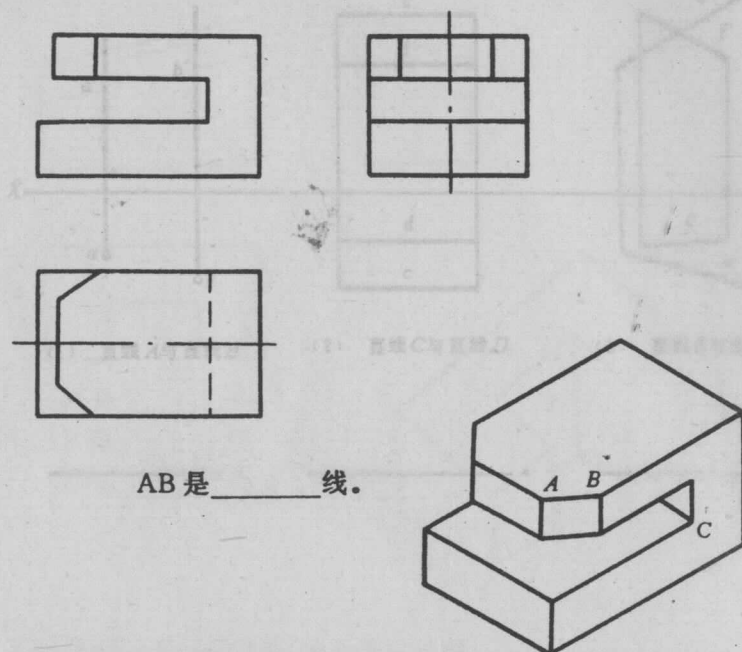
3. 已知 A 点的三投影, B 比 A 低 5, 前 5, 左 10, 试作 B 点的三投影。

4. 已知 A、B、C 的三投影, 求作 A、B、C 的立体图。

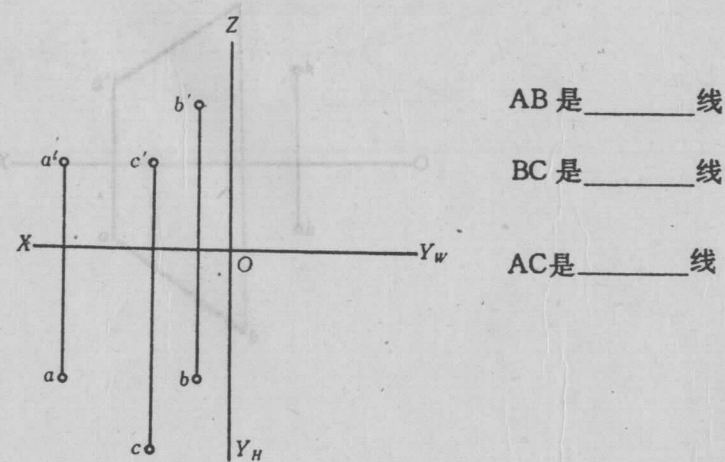
5. 试判断 A、B 两点的相对位置, 不可见点投影加“()”。



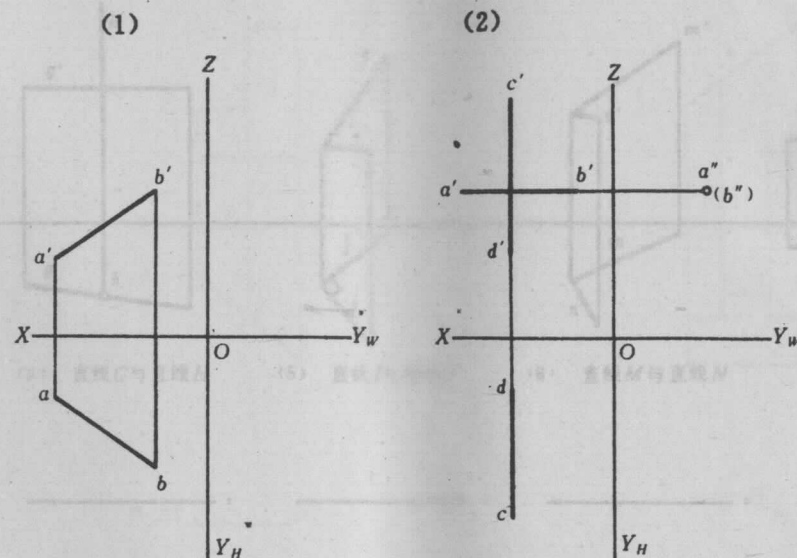
1. 已知立体图点的投影, 试在三视图中, 找出该三点的投影, 并判别 AB 是什么位置直线。



4. 已知 A、B、C 点的两投影, 试补第三投影, 分别连接各点, 判别各直线的相对位置。

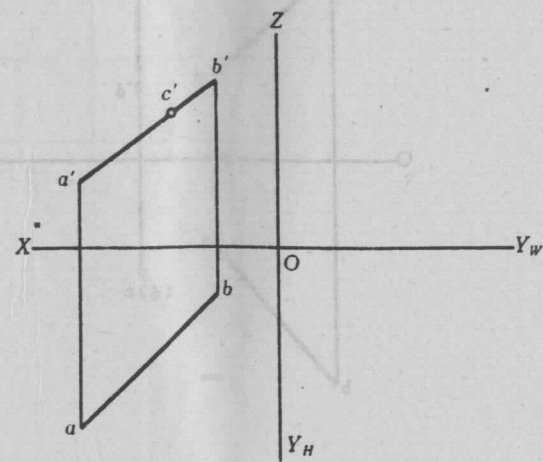


2. 已知直线的两投影, 求作第三投影。

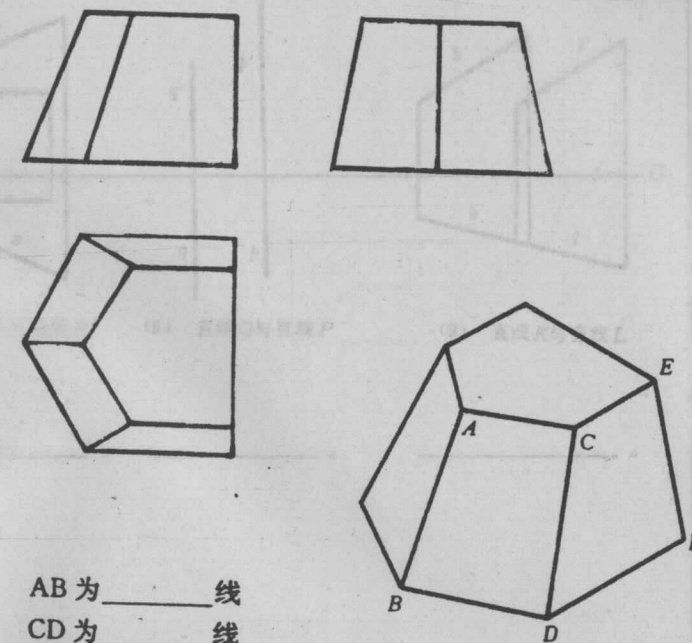


5. 试求作直线 AB 上点 C 的两投影。

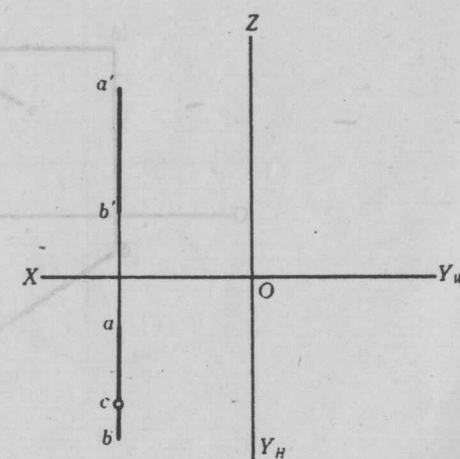
(1)



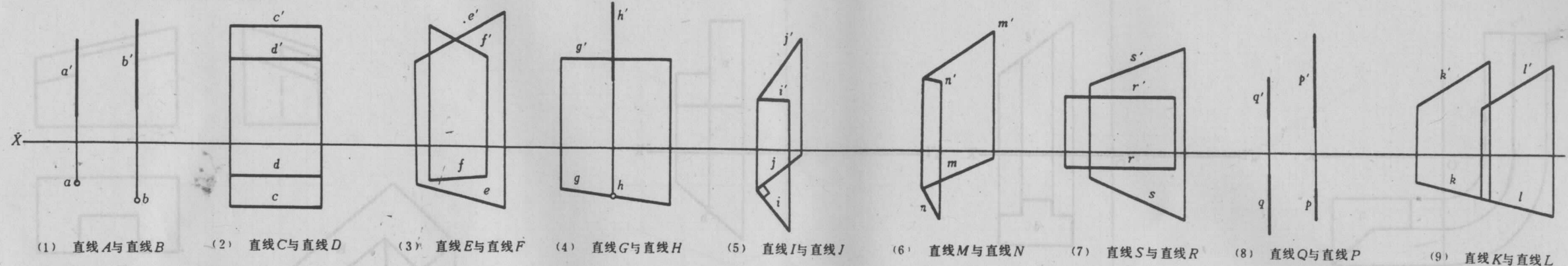
3. 判别直线对投影面的相对位置, 并在投影图上标出其投影。



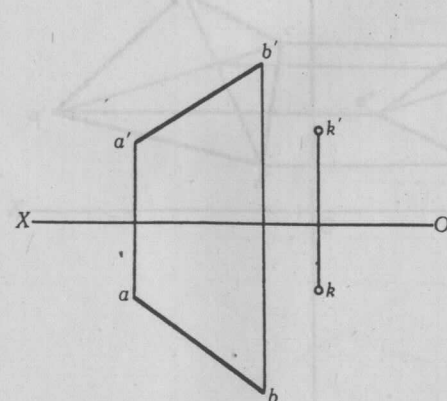
(2)



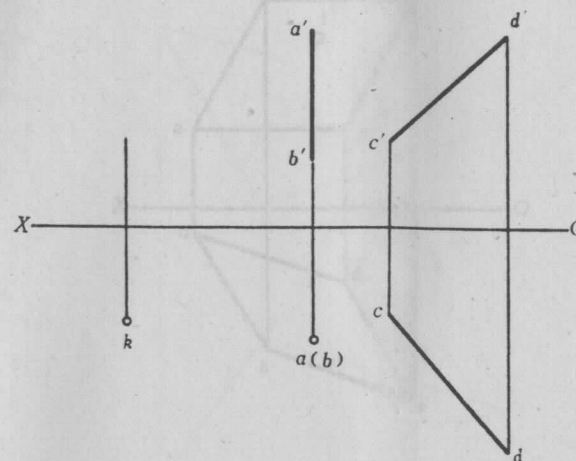
1. 判断下列各直线的相对位置。



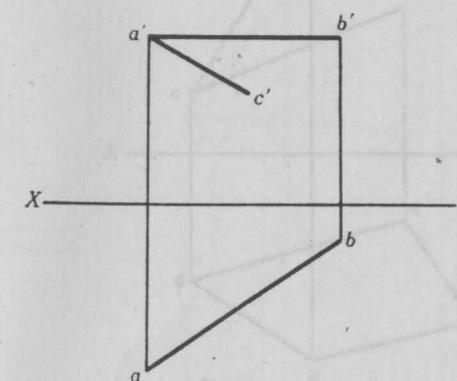
2. 过已知点K作直线KL与已知直线AB相交。



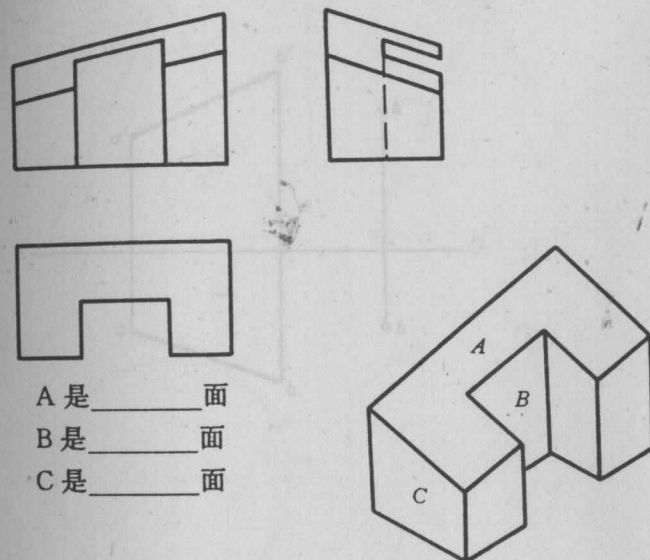
3. 试过点K作一直线与直线AB垂直于M,且与CD相交于L,并求出k'。



4. 已知直角三角形ABC, AC垂直AB, 试补全该直角三角形的投影。

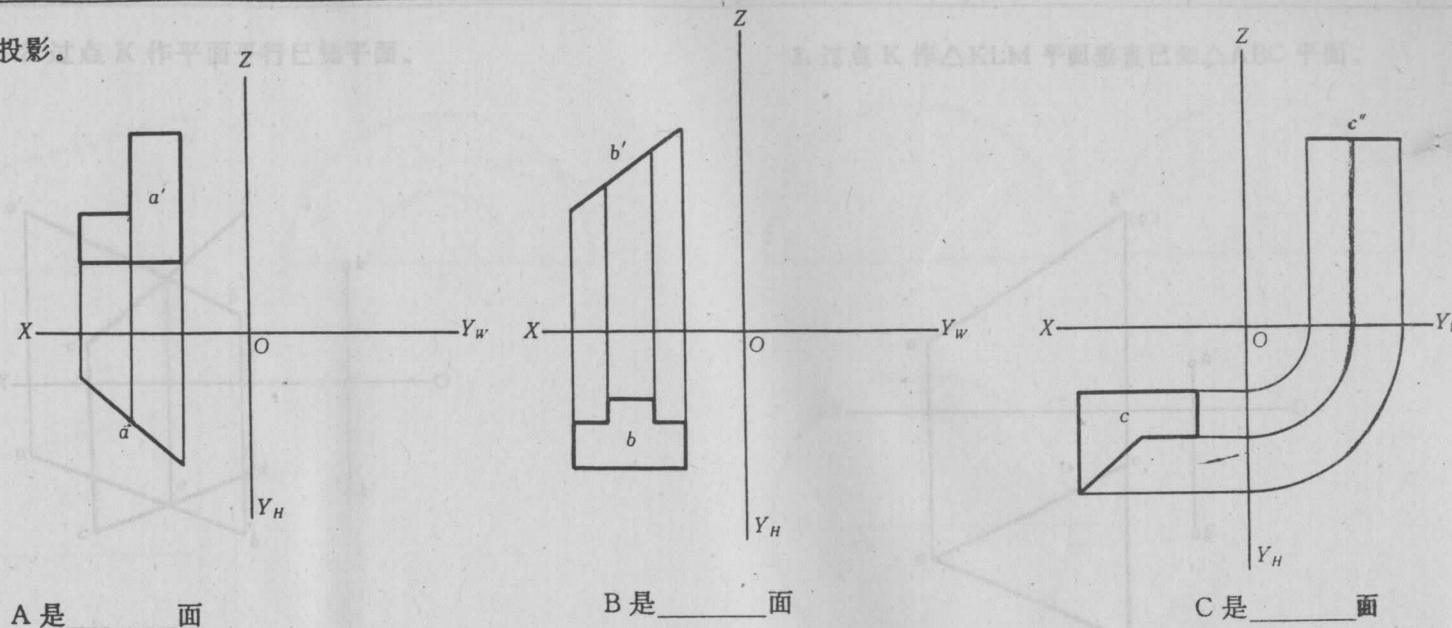


1. 已知立体图及投影图, 判别各标出平面对投影面的相对位置, 并在投影图上标出其投影。



A 是 _____ 面
B 是 _____ 面
C 是 _____ 面

2. 求作第三投影。

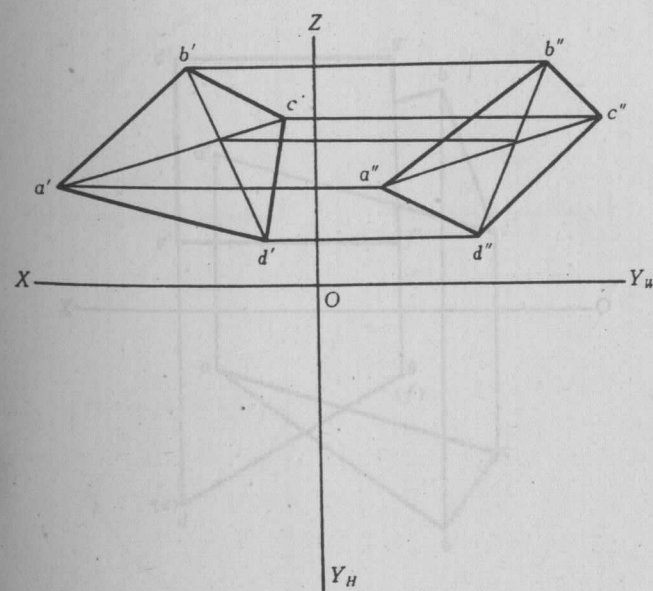


A 是 _____ 面

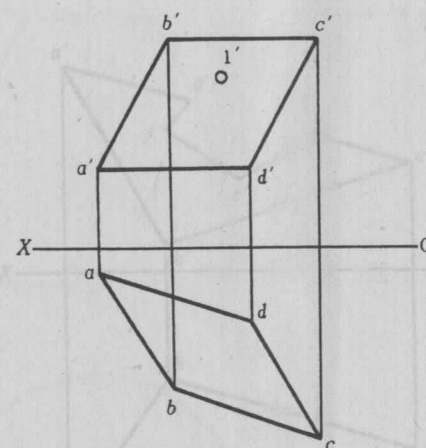
B 是 _____ 面

C 是 _____ 面

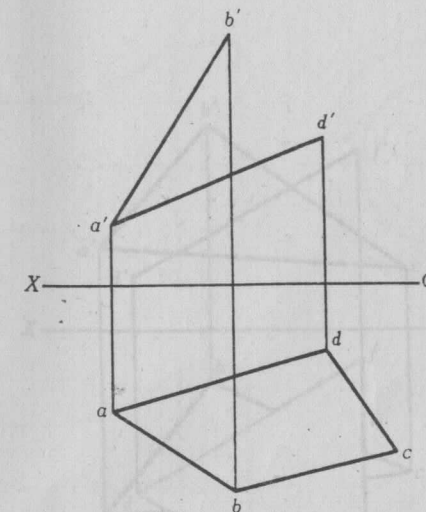
3. 已知平面的两投影, 求作第三投影。



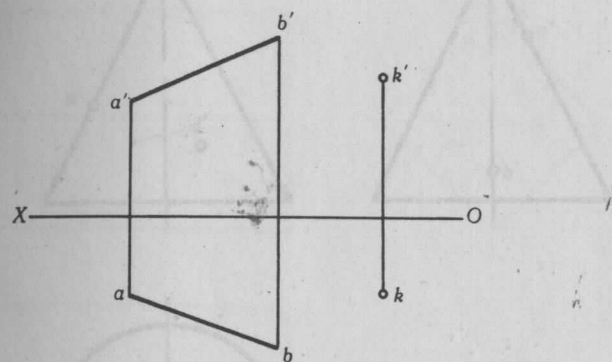
4. 已知平面上一点 I 的一投影, 求作另一投影。



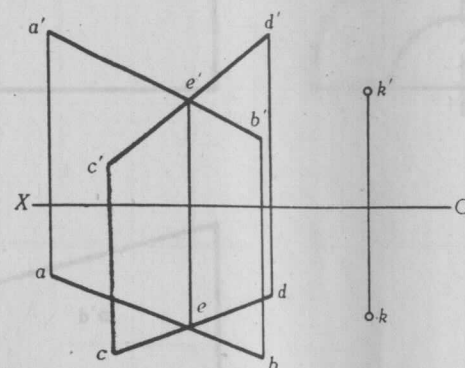
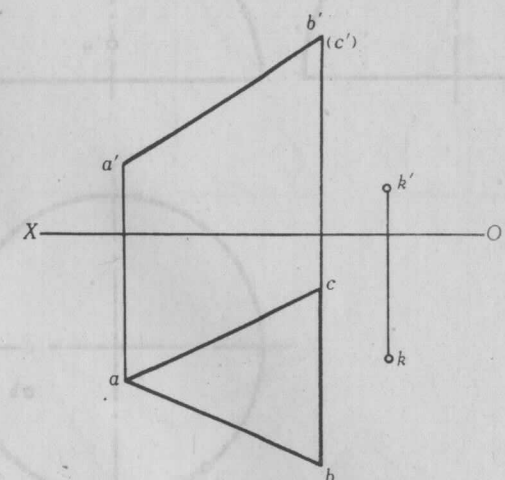
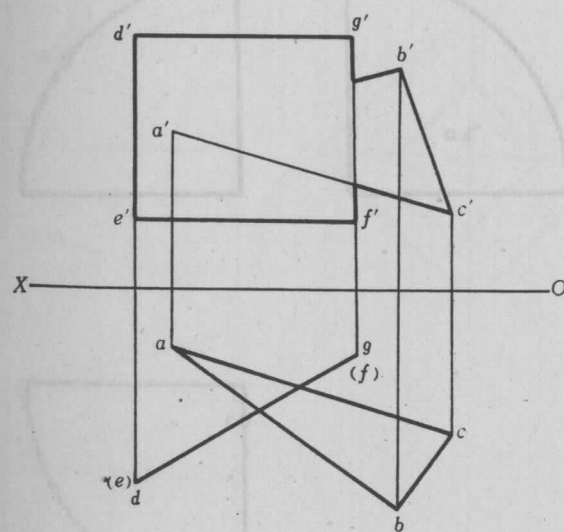
5. 已知平面 ABCD 的一投影, 试补全另一投影。



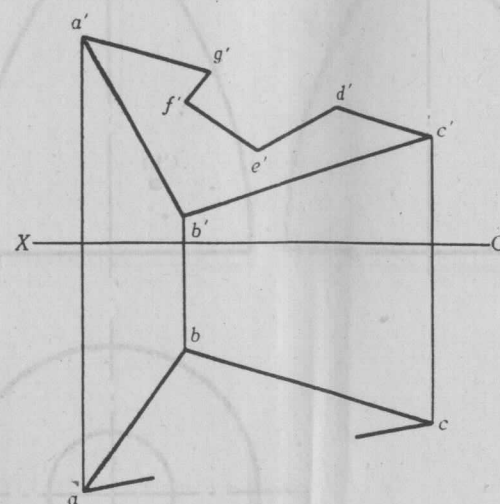
1. 过点 K 作平面平行已知直线。



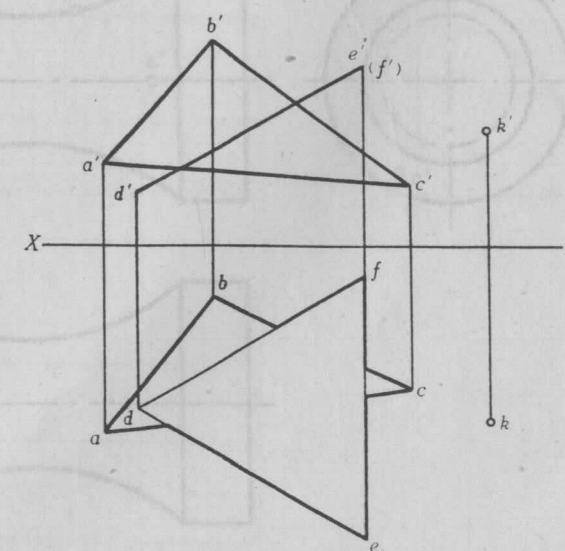
2. 过点 K 作平面平行已知平面。

3. 过点 K 作 $\triangle KLM$ 平面垂直已知 $\triangle ABC$ 平面。4. 已知平面为 $\triangle ABC$ 与 $\square DEFG$ 相交, 试求交线, 并判断可见性。

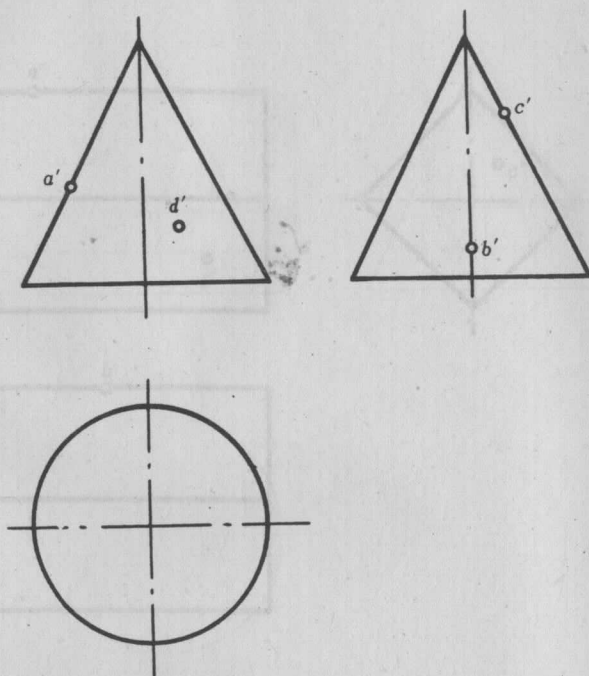
5. 补全缺口投影。



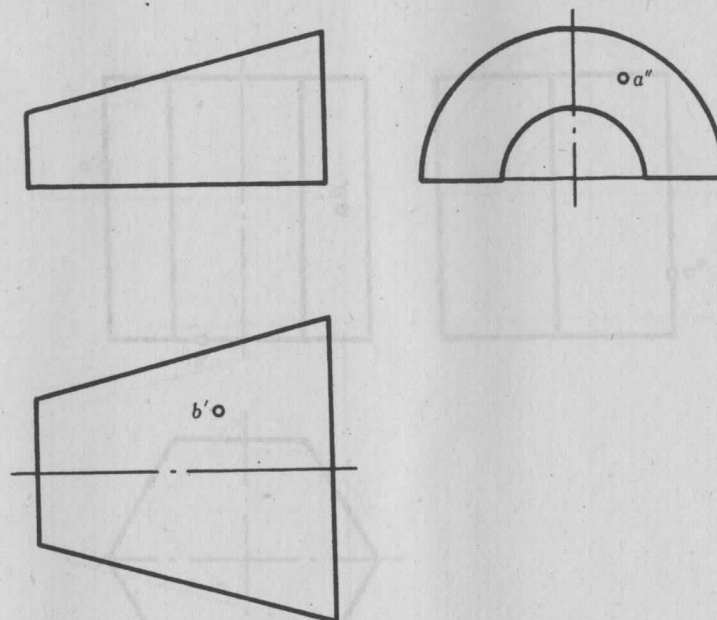
6. 过 K 作直线 KL 与两个已知平面均相平行。



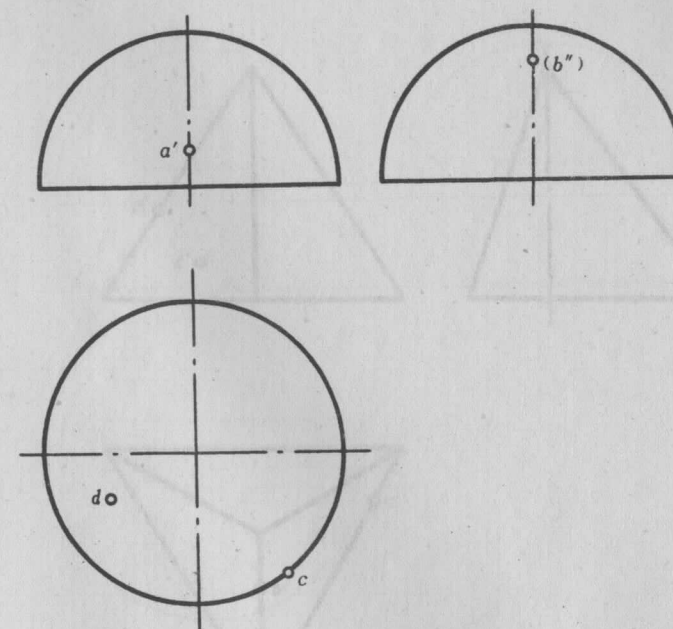
1.



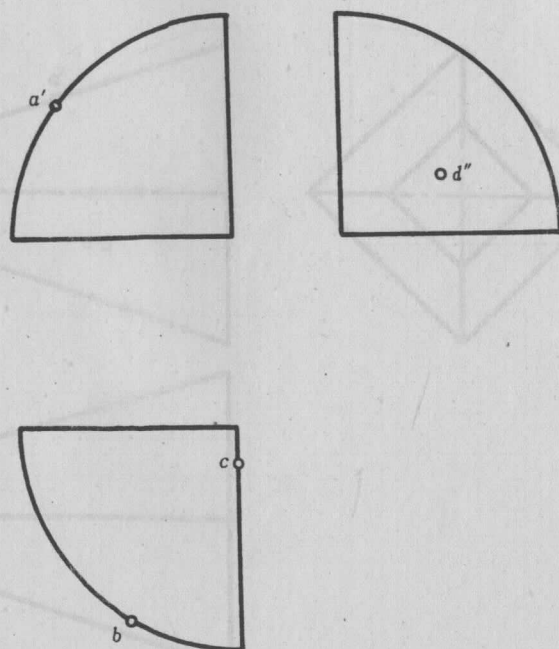
2.



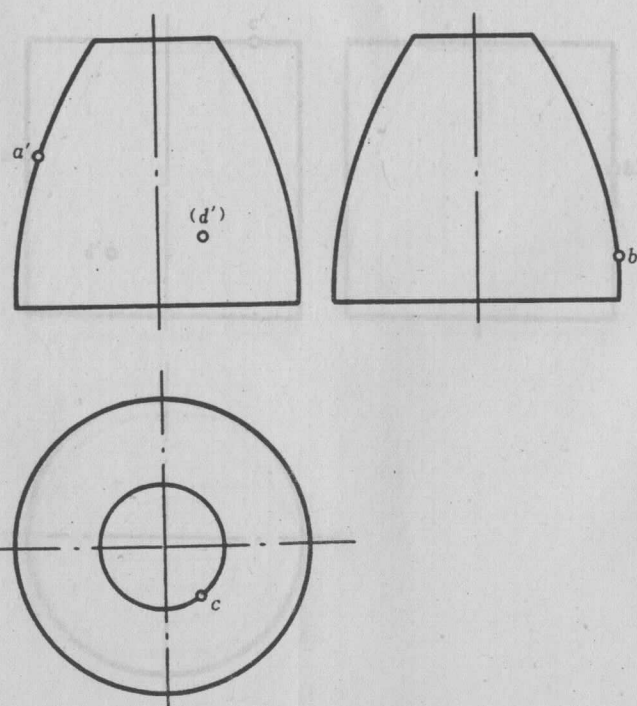
3.



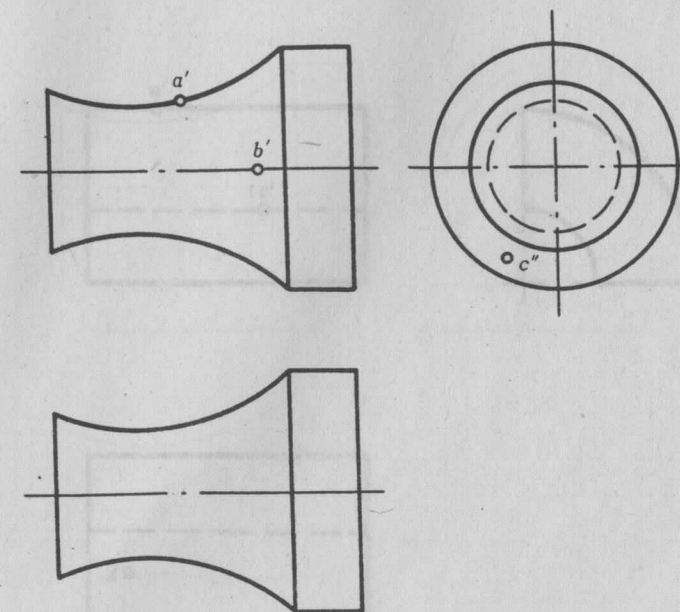
4.



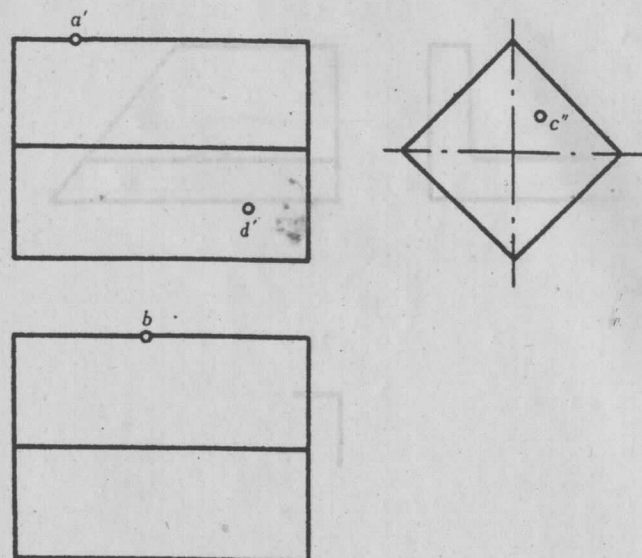
5.



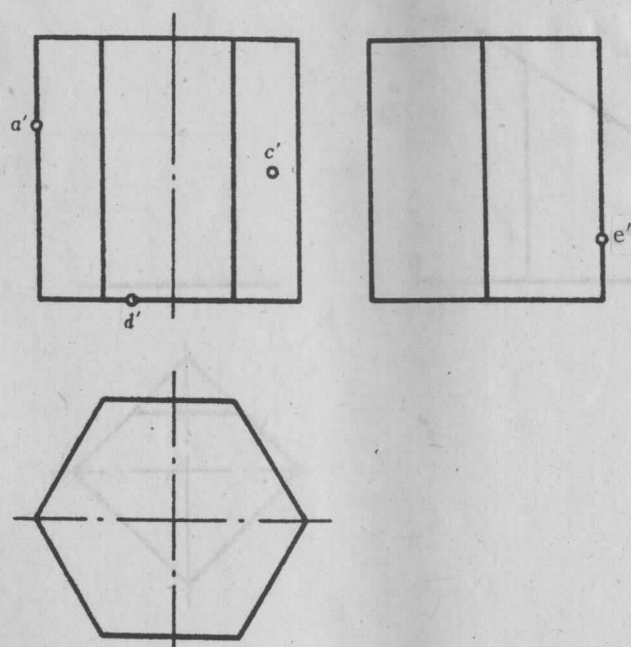
6.



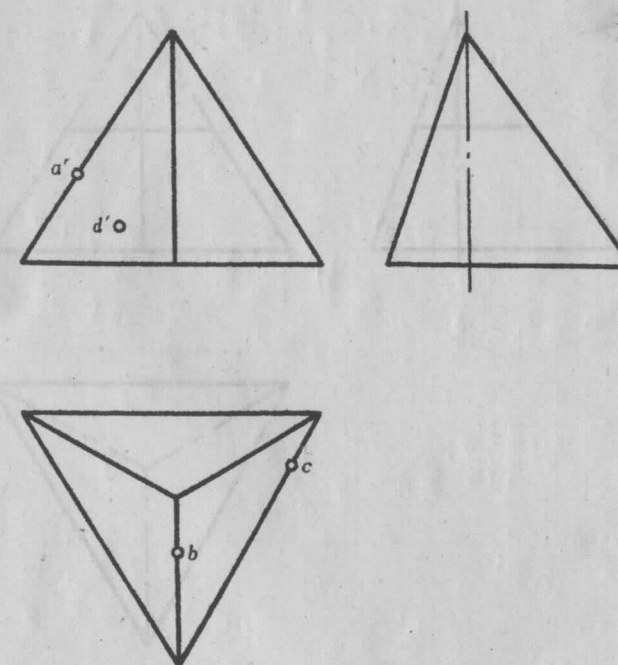
1



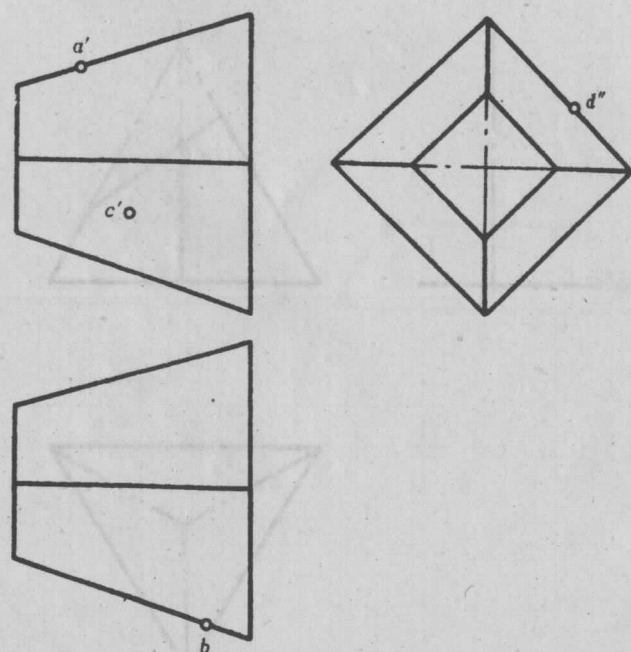
2



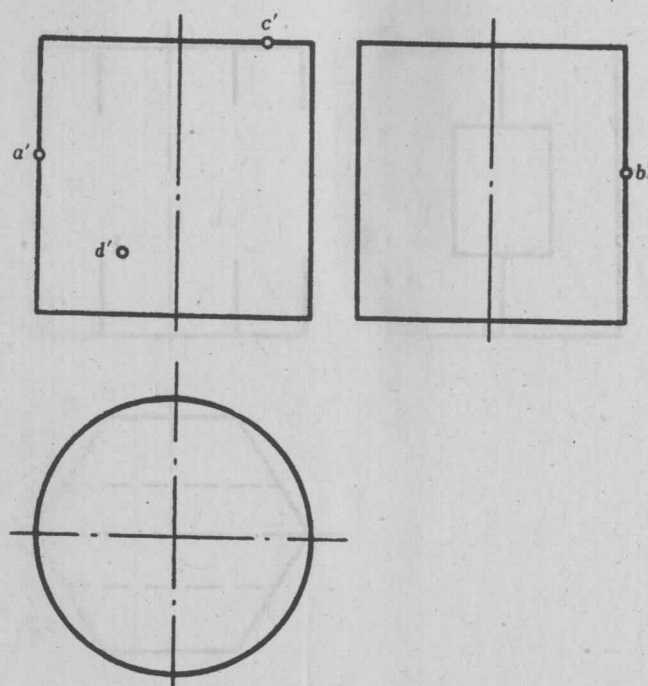
3



4



5



6

