

工程制图习题集

(高、王编)

投影制图部份习题解答

(本册页码在右上角、下方为原书页码，
带“√”者为常作题，其余为选作参考题)

北方工业大学工学院

2001年11月

PDG

二、三视图(共 25 题)

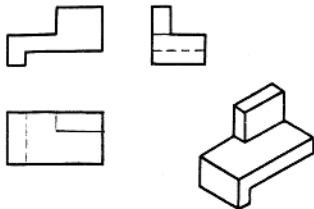
√1. 补画下列三视图中所缺的线段。

班号

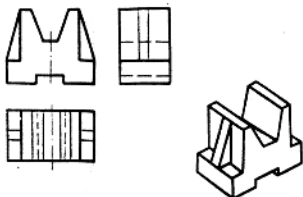
姓名

P1

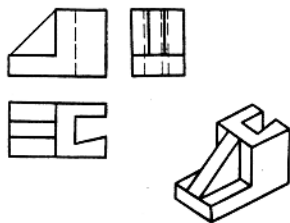
(1)



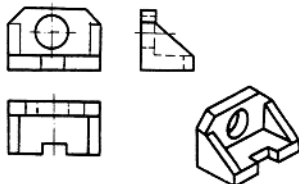
(2)



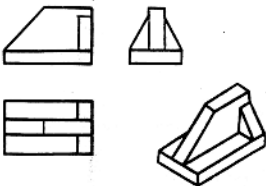
(3)



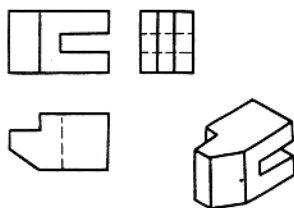
(4)



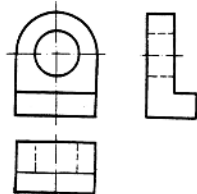
(5)



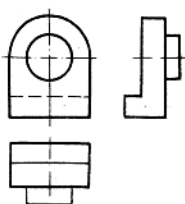
(6)



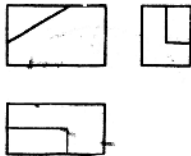
(7)



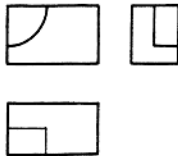
(8)



(9)

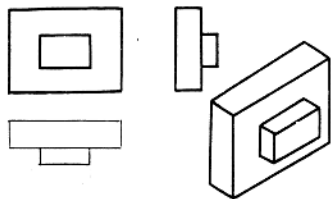


(10)

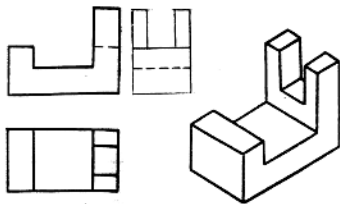


√2. 根据轴测图补画其余视图或根据主视图构思其余视图。

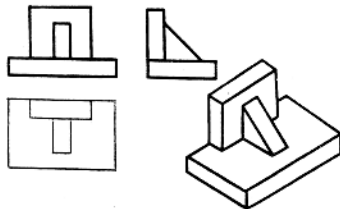
(11)



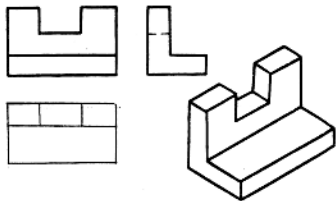
(12)



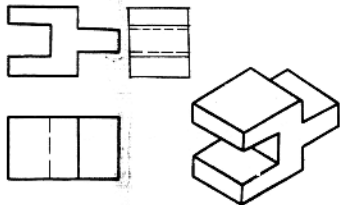
(13)



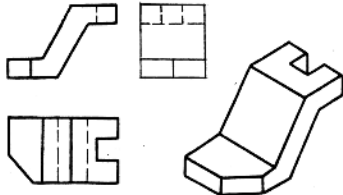
(14)



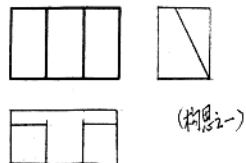
(15)



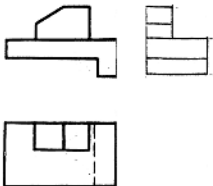
(16)



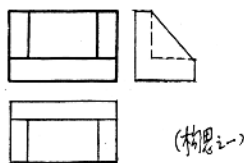
(17) 根据主视图构思俯视图和左视图。



(18)



(19) 根据主视图构思俯视图和左视图。(选)

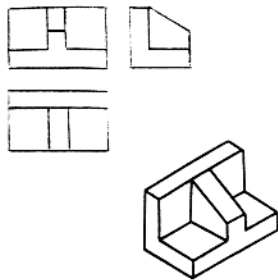


✓3. 根据轴测图画三视图(尺寸在图上量取, 任选2~3个题)。

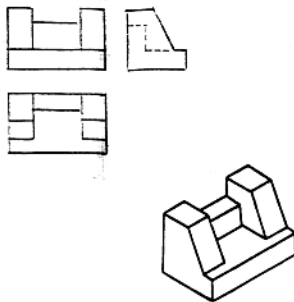
班号

姓名

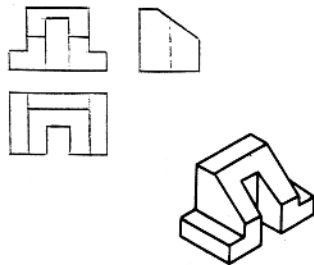
(20)



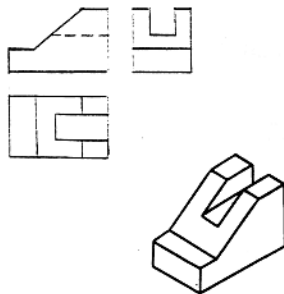
(21)



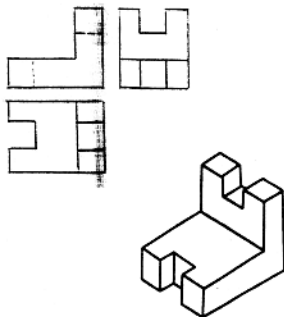
(22)



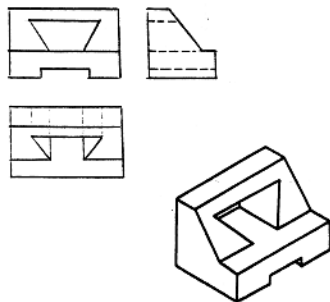
(23)



(24)



(25) 选作

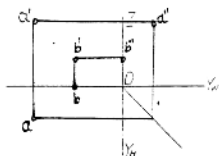
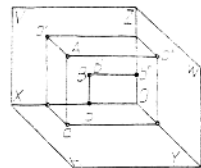


三、点、直线、平面的投影(共 27 题)*

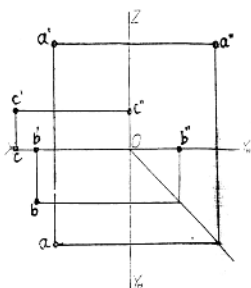
P4

1. 点、直线投影(1~12 题)。

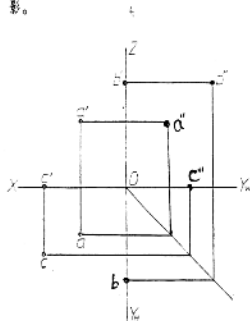
- (1) 根据 A 、 B 两点空间位置画出三面投影图(尺规)。(2) 已知 $A(20, 25, 30)$ 、 $B(25, 15, 0)$ 、 $C(30, 0, 10)$ 十直接由空间位置画出三面投影图(尺规)。



作出它们的三面投影图。

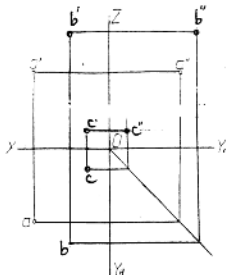


- (3) 根据 A 、 B 、 C 三个点的两面投影, 画出第三投影。

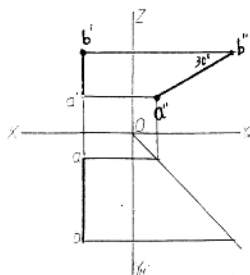


班号 姓名

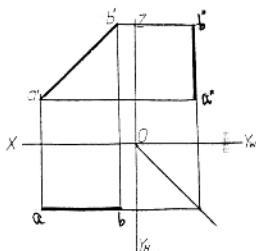
- (4) 已知 A 点投影, 求作 B 点和 C 点投影。 B 点在 A 点右 10mm、前 5mm、上 10mm。 C 点在 A 点右 15mm、后 5mm、下 15mm。



- (5) 已知直线 AB 与 H 面夹角成 30° , 求 AB 直线。(6) 已知直线 AB 平行于 V 面, 且距 V 面 18mm, 求 H 、 W 面投影, 判明其对投影面的相对位置。

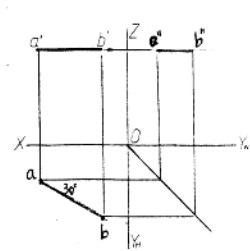


AB 侧平线



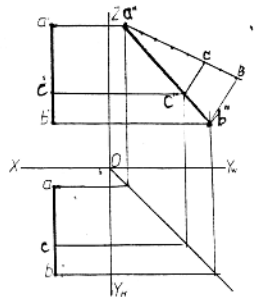
AB 正垂线

- (7) 已知直线 AB 的一端点 A 距 V 面 10mm, F 面夹角 30° , 求其余投影, 判明其对投影面的相对位置。



AB 水平线

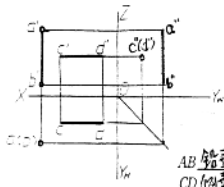
- (8) 求作直线 AB 的侧面投影, 并在直线上取点 C , 使 $AC:CB=5:2$, 判明其对投影面的相对位置。



AB 侧垂线

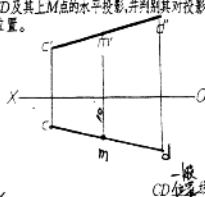
2. 两直线相对位置(13~16题)和平面(17~20题)投影。

- (9) 完成直线 AB、CD 其余投影, 并判别其对投影面的相对位置。



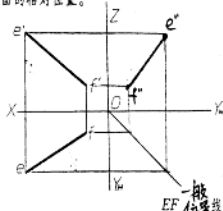
AB 铅垂 线
CD 侧垂 线

- (10) 已知直线 CD 及其上 M 点的正面投影和直线 CD 一端 C 的水平投影 c。若 M 点距 V 面为 10mm, 试完成直线 CD 及其上 M 点的水平投影, 并判别其对投影面的相对位置。



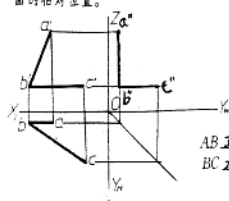
CD 铅垂 线

- (11) 求作直线 EF 的第三投影, 并判别其对投影面的相对位置。



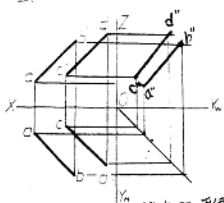
EF 侧垂 线

- (12) 求作直线 AB、BC 的第三投影, 并判别其对投影面的相对位置。



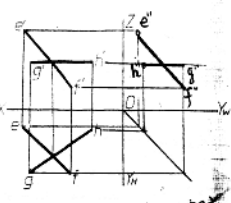
AB 正平 线
BC 水平 线

- (13) 求作两直线的第三投影, 并说明空间相对位置。



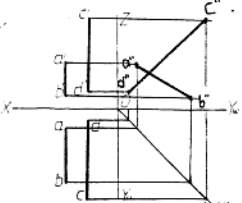
AB 与 CD 平行

- (14) 求作两直线的第三投影, 并说明空间相对位置。



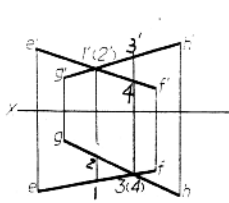
EF 与 GH 相交

- (15) 求作两直线的第三投影, 并说明空间相对位置。

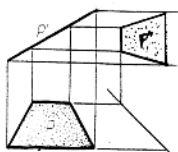


AB 与 CD 交错

- (16) 求作相交两直线的重影点的投影。

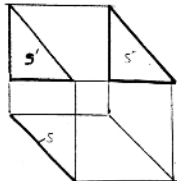


- (17) 求作 P 平面的第三投影, 并注明其对投影面的相对位置。



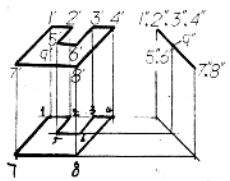
P 为 正垂 面

- (18) 求作 S 平面的第三投影, 并注明其对投影面的相对位置。



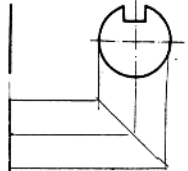
S 为 侧垂 面

- (19) 求作 Q 平面的第三投影, 并注明其对投影面的相对位置。



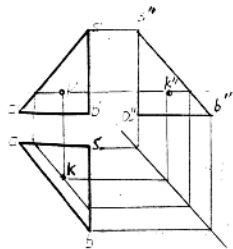
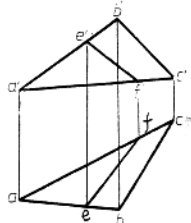
Q 为 侧垂 面

- (20) 求作平面的第三投影, 并注明其对投影面的相对位置。

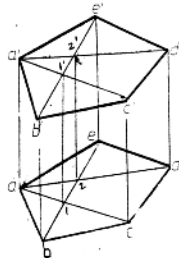
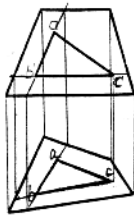


平面为 侧垂 面

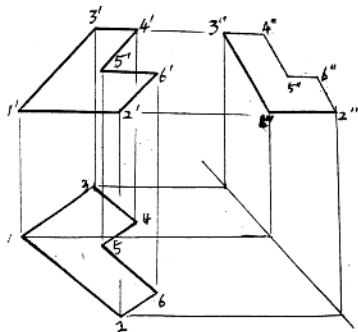
3. 平面上点、直线投影(21~27题)。

(21) 完成 $\triangle ABS$ 平面侧面投影和 K 点的其余投影。(22) 求作 $\triangle ABC$ 中 EF 线的水平投影 ef 。

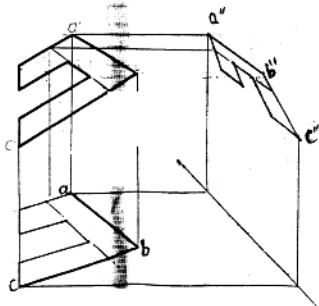
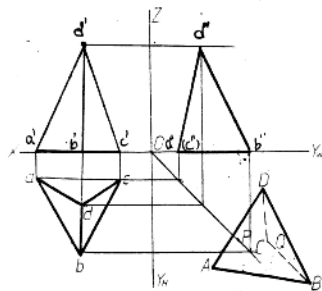
(23) 完成多边形的水平投影。

(24) 求作平面上 $\triangle ABC$ 的水平投影。

(25) 求作多边形的水平投影。



(26) 完成多边形的水平投影, 并求作侧面投影。

(27) 已知相交二平面 P, Q 的底边 AB, BC 在水平面上, D 点距水平面 30mm , 试完成正面投影和侧面投影。

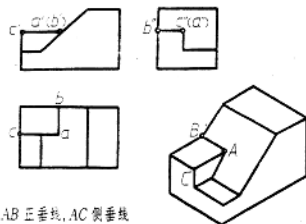
四、立体上直线和平面的投影(共7题)

根据立体图,在三视图中标出直线和平面的三个投影,并说明其对投影面的相对位置。

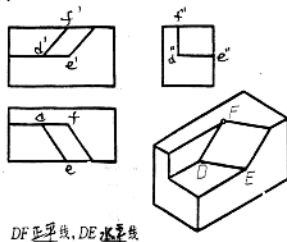
班号

姓名

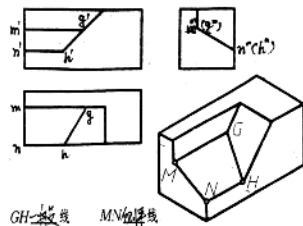
例1



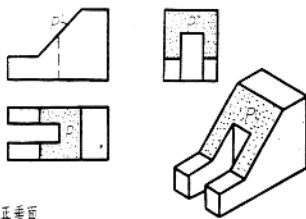
(1)✓



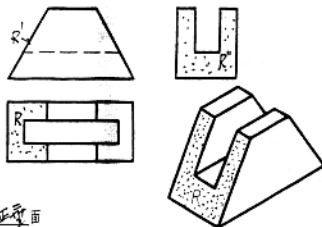
(2)✓



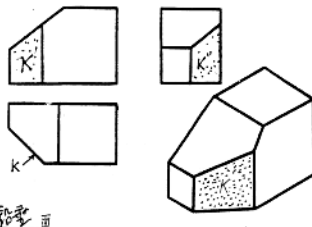
例2



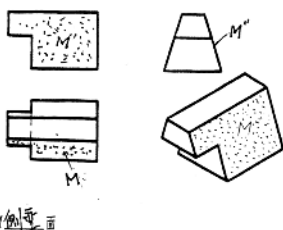
(1)✓



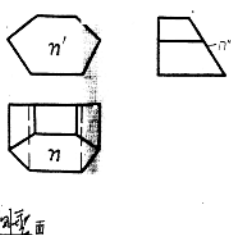
(2)✓



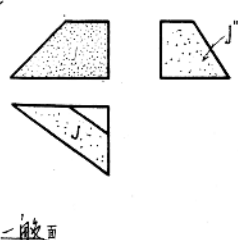
(3)



(4)



(5)✓



五、基本体(共12题)

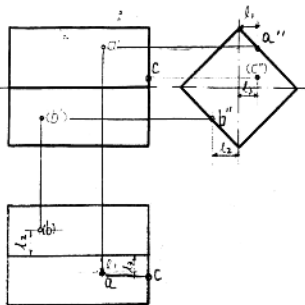
1. 求作平面立体的第三视图及表面上点的其余投影。

班号

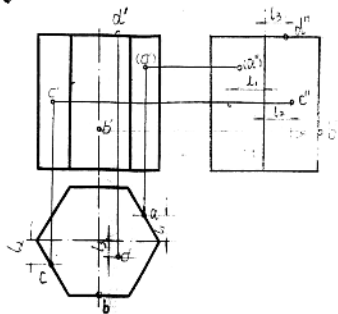
姓名

P8

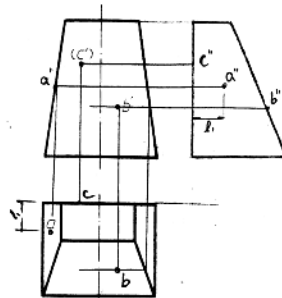
(1)✓



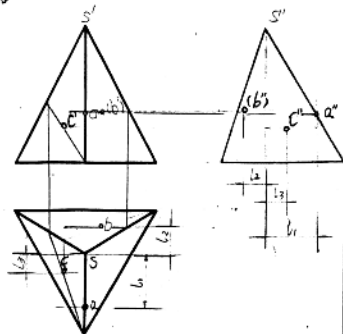
(2)✓



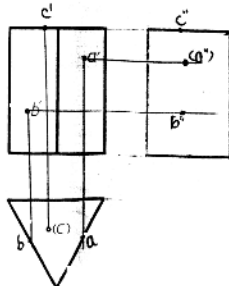
(3)✓



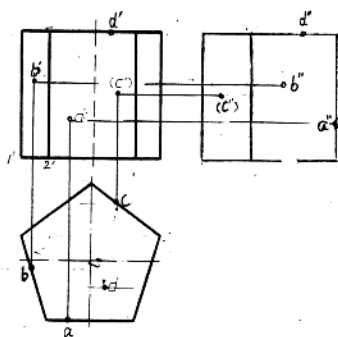
(4)✓



(5)✓



(6)✓



2. 求作曲面立体第三视图及表面上点的其余投影。

(7) ✓

(8) ✓

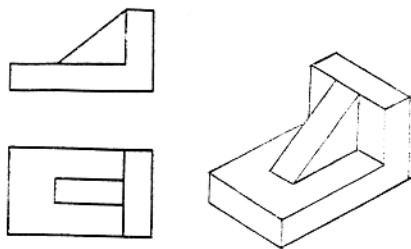
(9) ✓

(10)

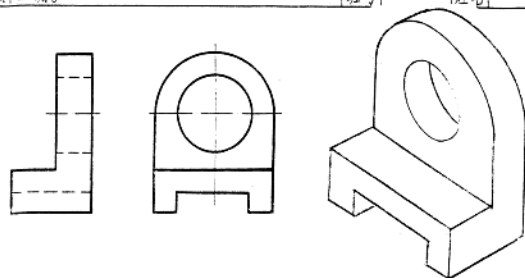
(11)*

(12)*

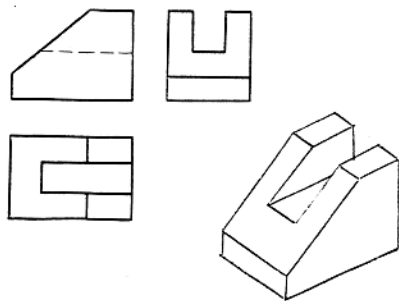
(1) ✓



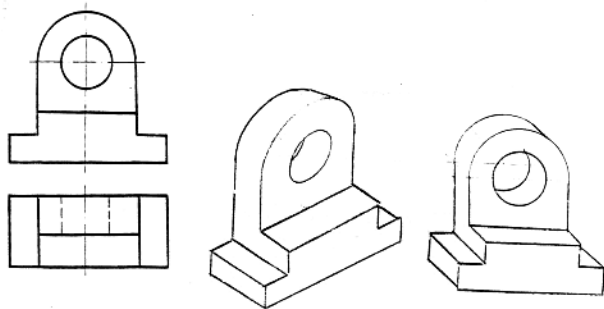
(3) ✓



(2) ✓



(4) ✓

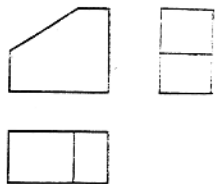


1. 求作下列各题的第三视图。

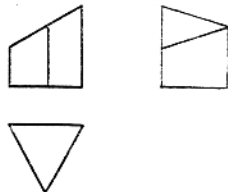
班号

姓名

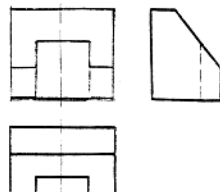
(1) ✓



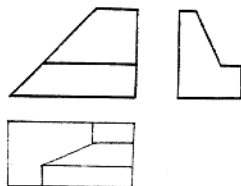
(2) ✓



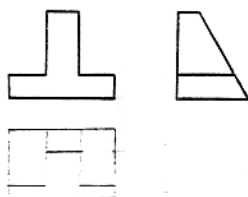
(3) ✓



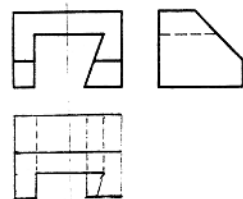
(4) ✓



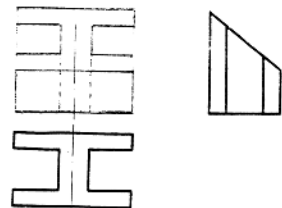
(5) ✓



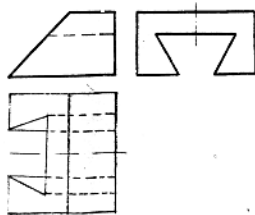
(6)



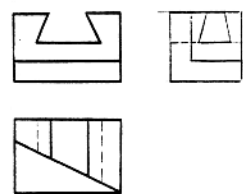
(7) ✓



(8)



(9)



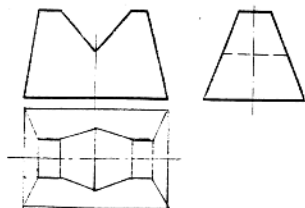
2. 求作以下各题第三视图(其中第(18)题,可根据主视图构思物体形状,画出俯视图和左视图)。

班号

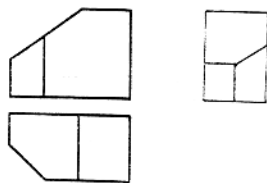
姓名

P13

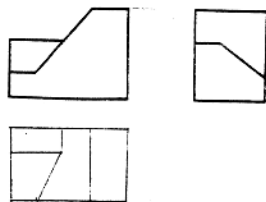
(10)



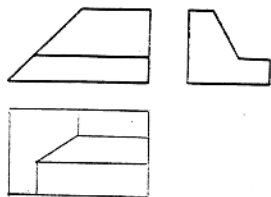
(11) ✓



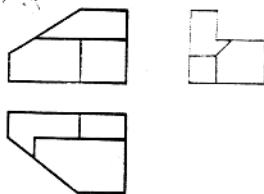
(12) ✓



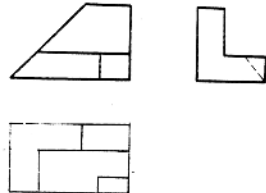
(13) ✓



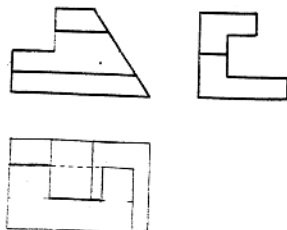
(14) ✓



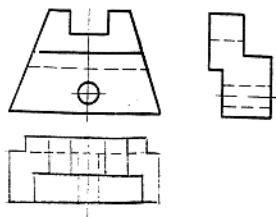
(15) ✓



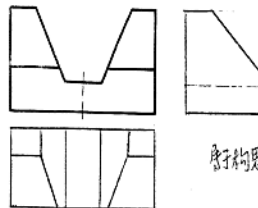
(16) ✓



(17)



(18) 思考



思考题方掌之一

九、回转载切体(共 15 题)

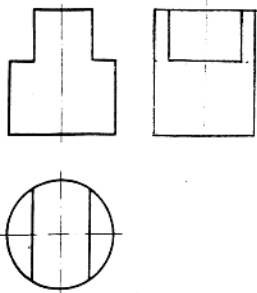
1. 分析曲回立体的截交线, 并画出第三视图。

班号

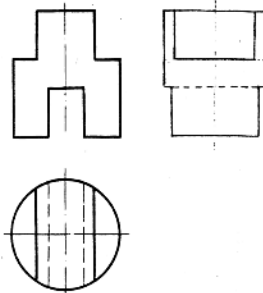
姓名

P14

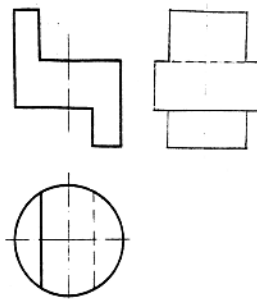
(1) ✓



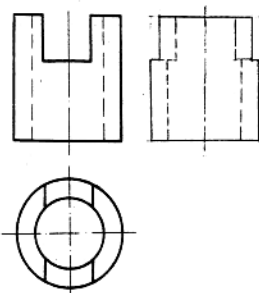
(2) ✓



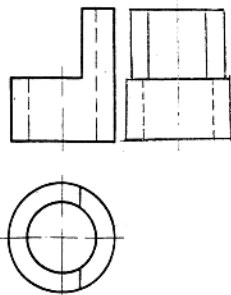
(3) ✓



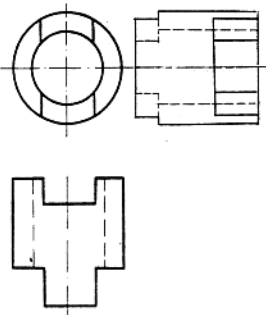
(4) ✓



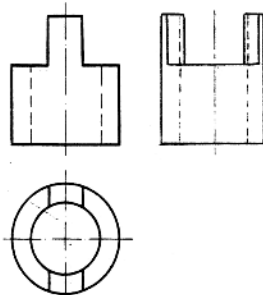
(5) ✓



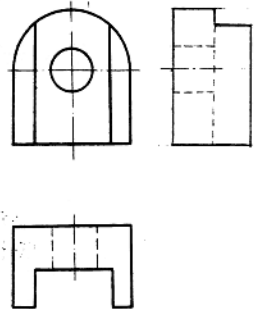
(6)



(7)



(8) ✓

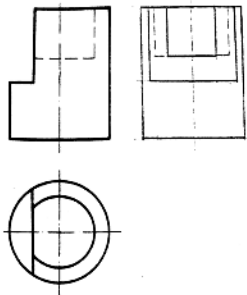


2. 分析曲面立体的截交线, 并画出第三视图。

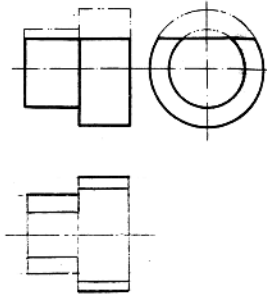
班号

姓名

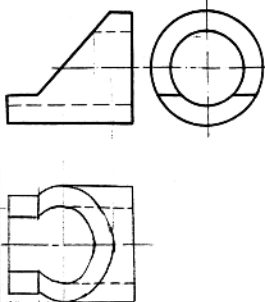
(9)



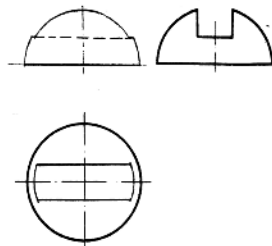
(10)



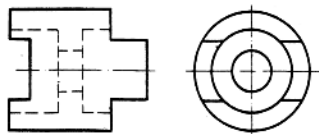
(11)



(12) 完成主、俯视图。

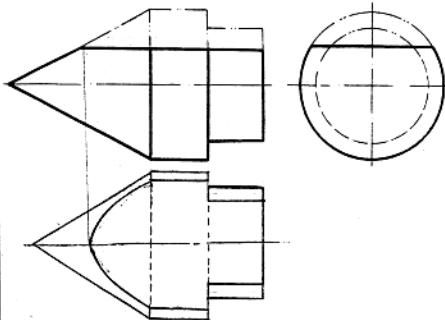


(13)

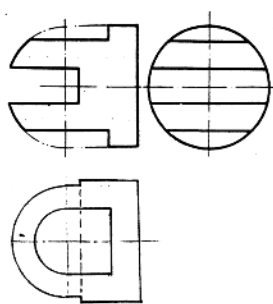


此题与本章1(6)题
大致相同, 可断想

(14)

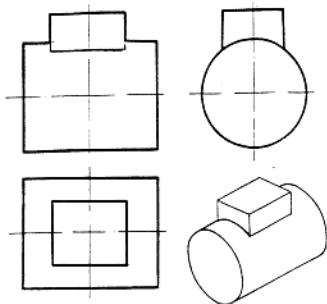


(15)

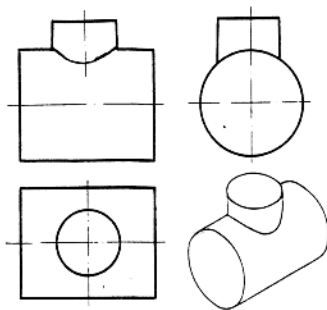


1. 求作下列各题中所缺的相贯线投影。

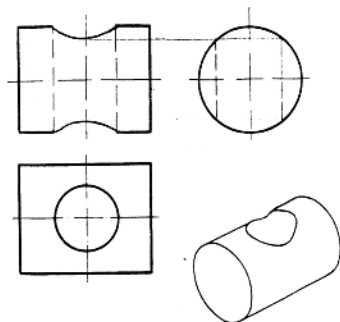
(1)✓



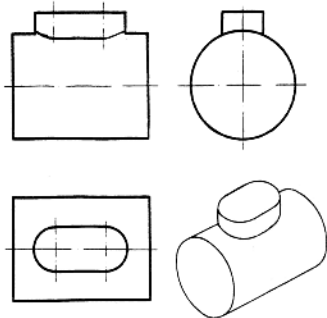
(2)✓



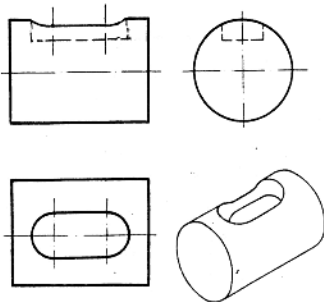
(3)✓



(4)



(5)



(6)✓

