

請用”放映(或按F5)”模式觀看

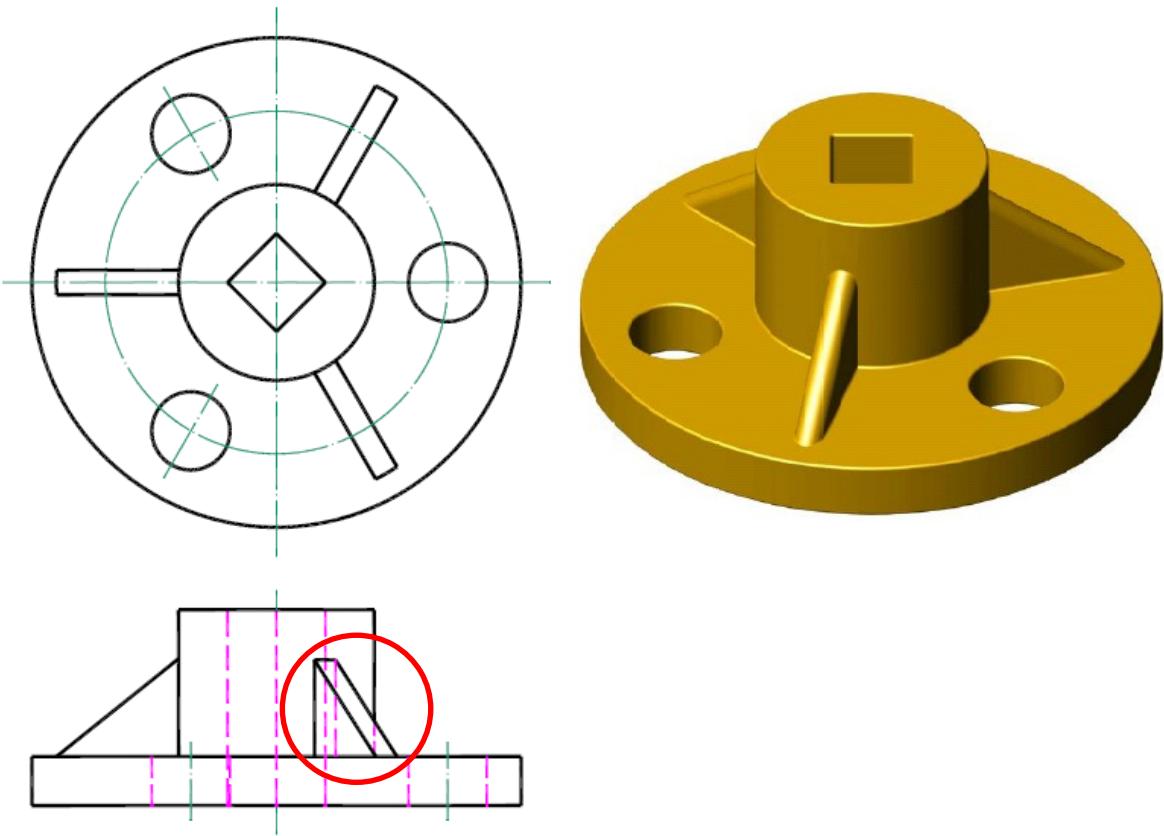
13.13 特殊視圖與習用畫法

- 為增進讀圖效率與節省繪圖時間，有時不按正投影的原理繪圖，而採取大家公認的簡化畫法，稱之為習用畫法。

13.13.1 轉正視圖

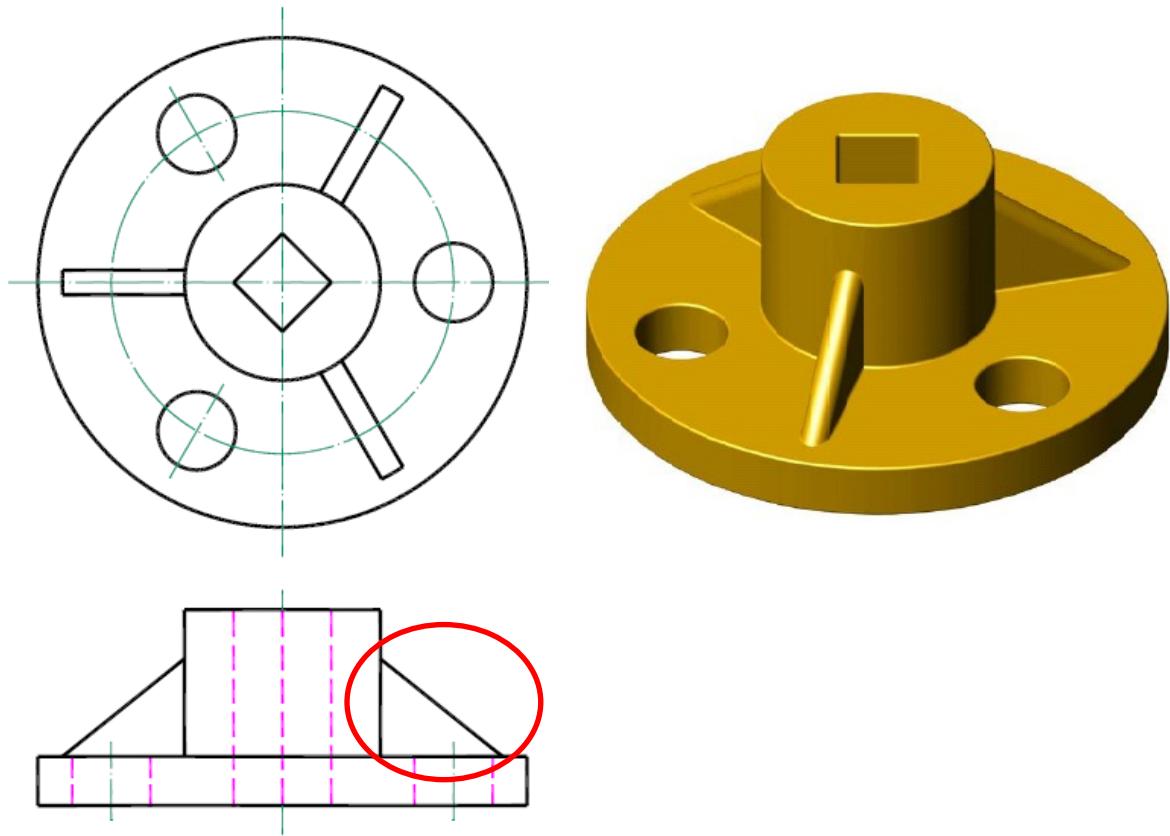
- 一般機件中，常出現數個呈等距分佈之孔、肋、耳、幅等，若將每個特徵直接投影，將使視圖變得複雜且難懂。
- 習慣上，不論有多少個孔、耳等，皆假想以中心點為軸，將其旋轉到左右兩側且與投影面平行的位置，再行投影即可。

圖 13.43 轉正視圖(肋)-1/3



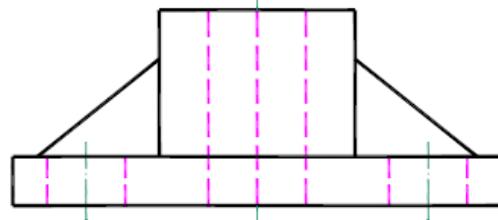
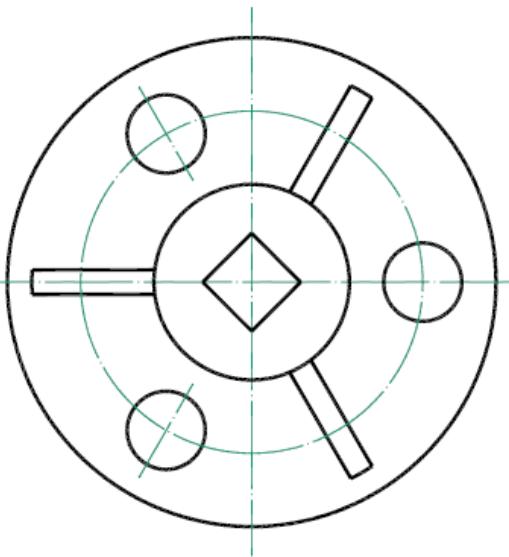
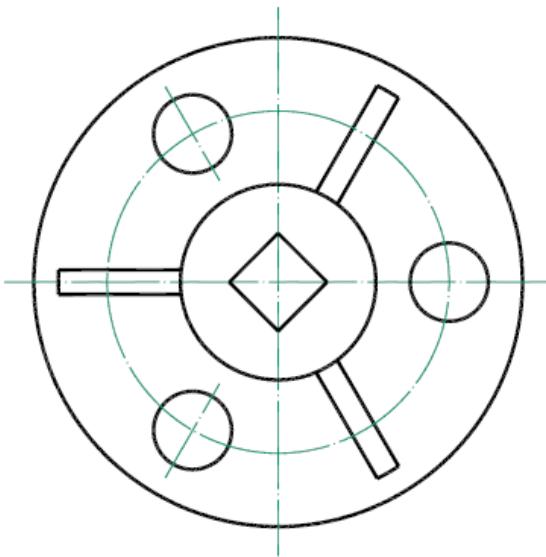
不佳

圖 13.43 轉正視圖(肋)-2/3



佳

圖 13.43 轉正視圖 (肋) -3/3



正確



錯誤

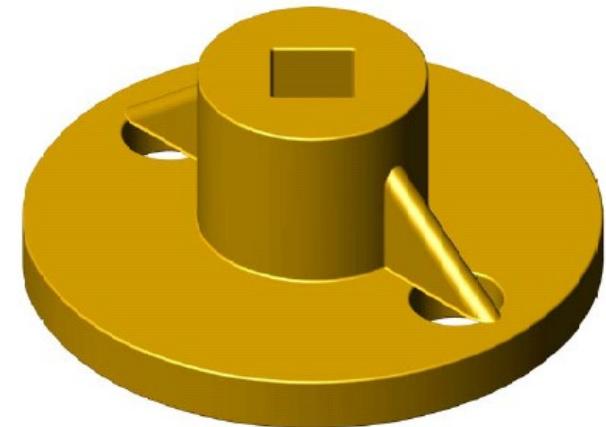
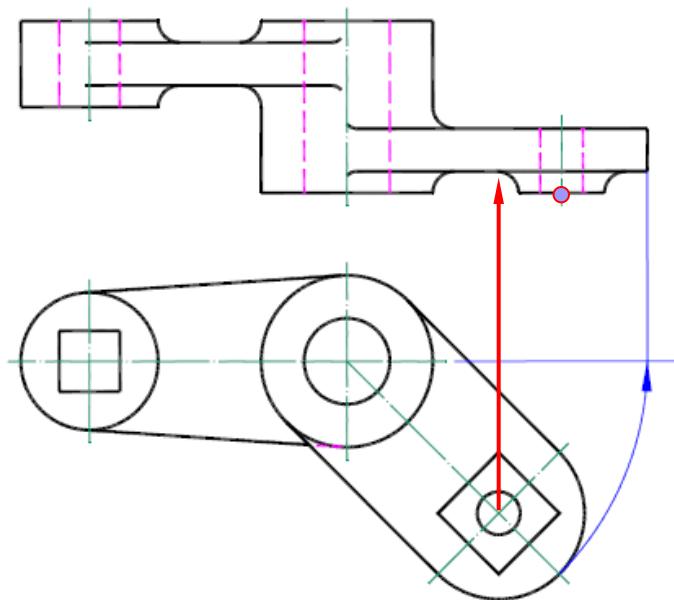


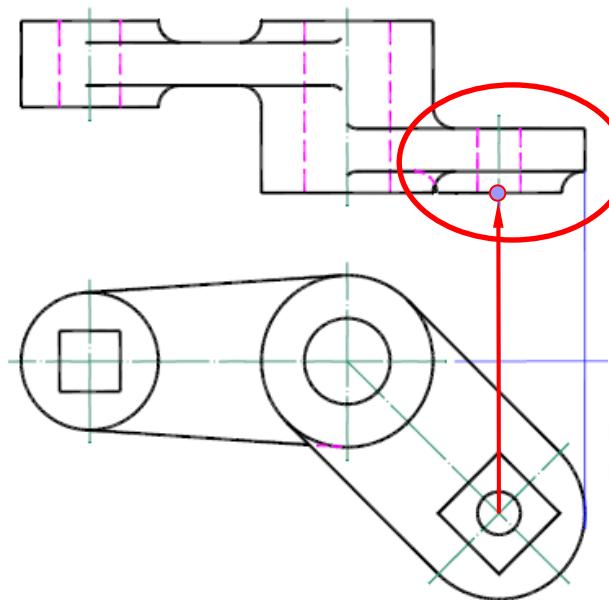
圖 13.44 轉正視圖 -1/3

- 工件上與投影面不平行的部位，可迴轉至與投影面平行再行投影，並於視圖上繪迴轉之輔助線。



正確

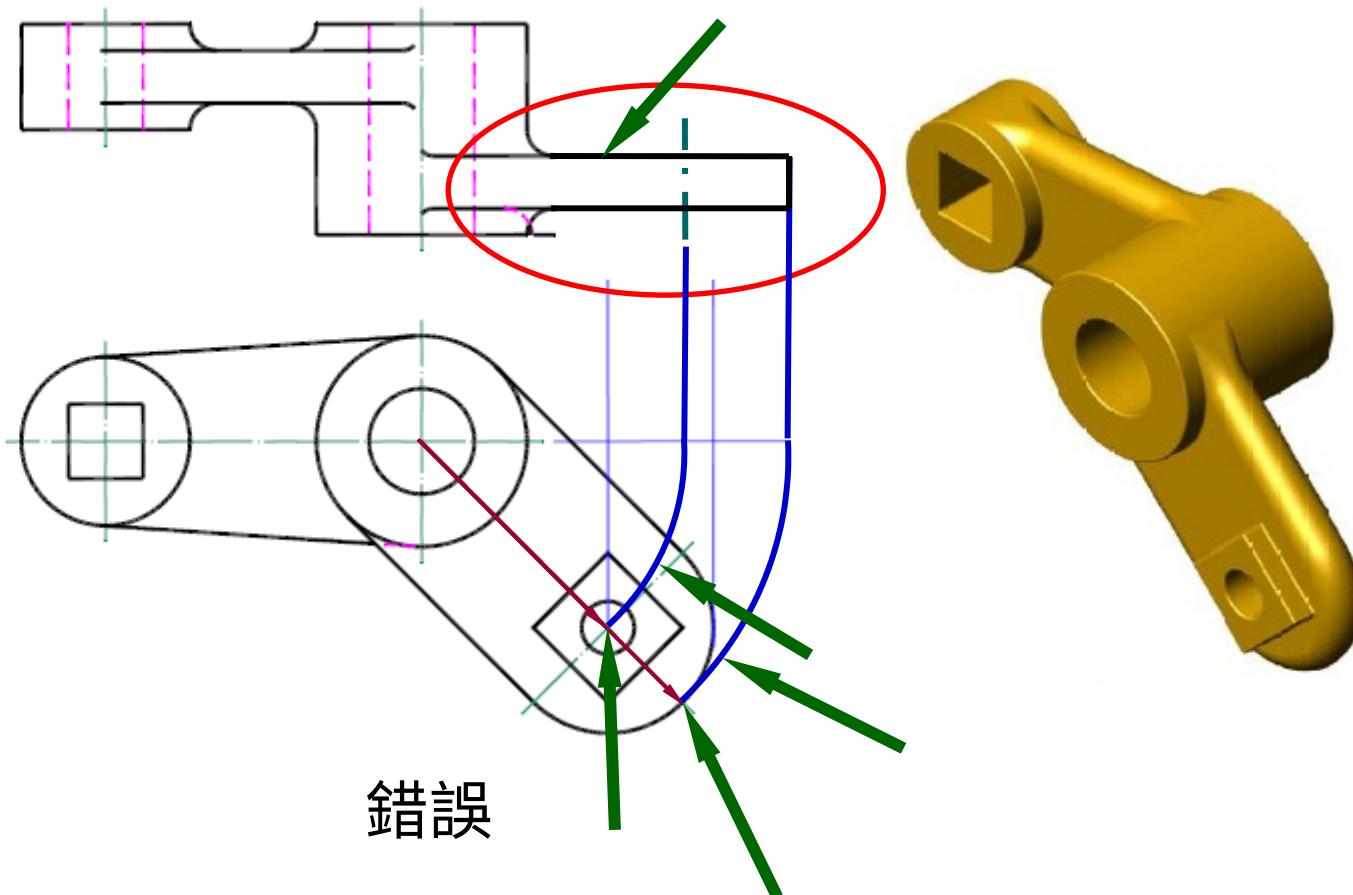
CAD圖



錯誤

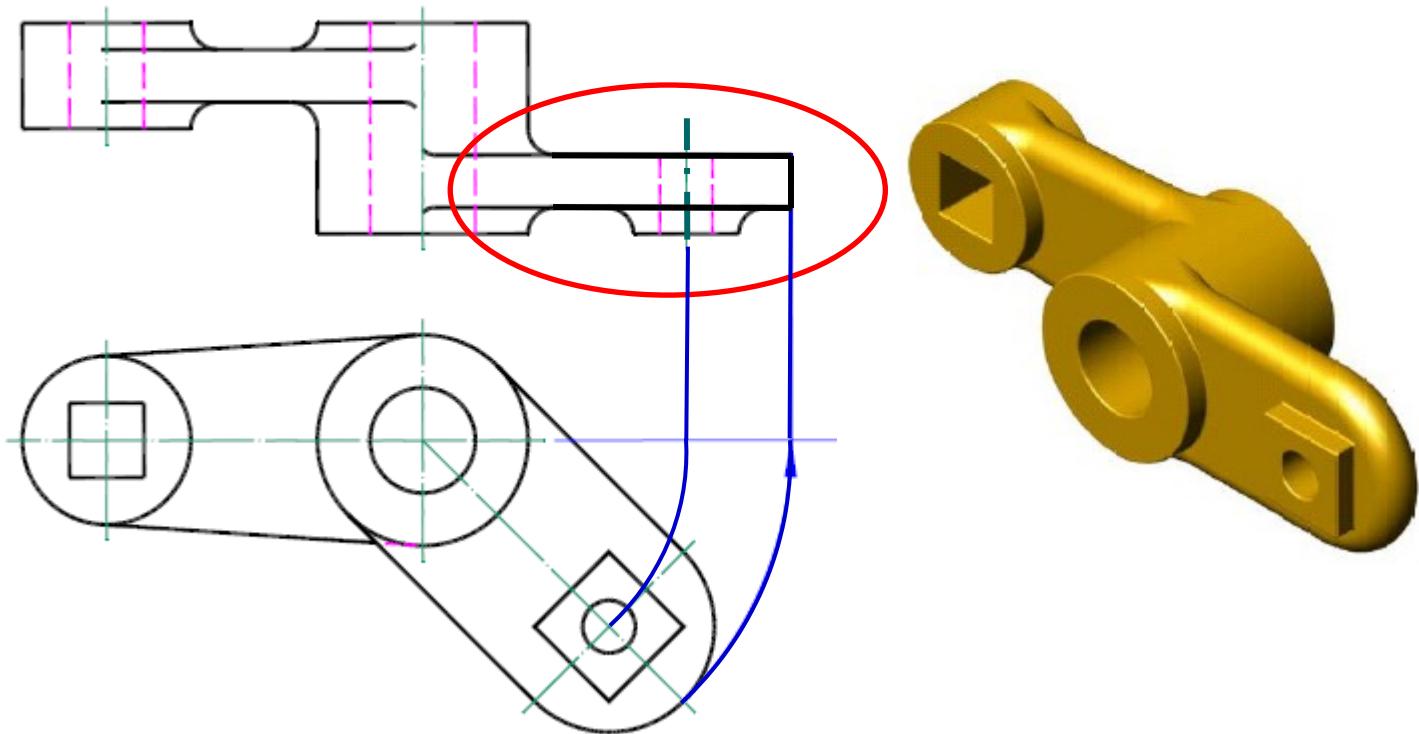


圖 13.44 轉正視圖 -2/3



CAD圖

圖 13.44 轉正視圖 -3/3



正確

CAD圖

13.13.2 中斷視圖 1/3

- 細長的物體，為節省空間或提高繪圖比例，可將其期間形狀無變化部分中斷去除之，以縮短繪圖長度，稱之為中斷視圖。
- 其中斷裂部分以不規則之折斷線繪出。

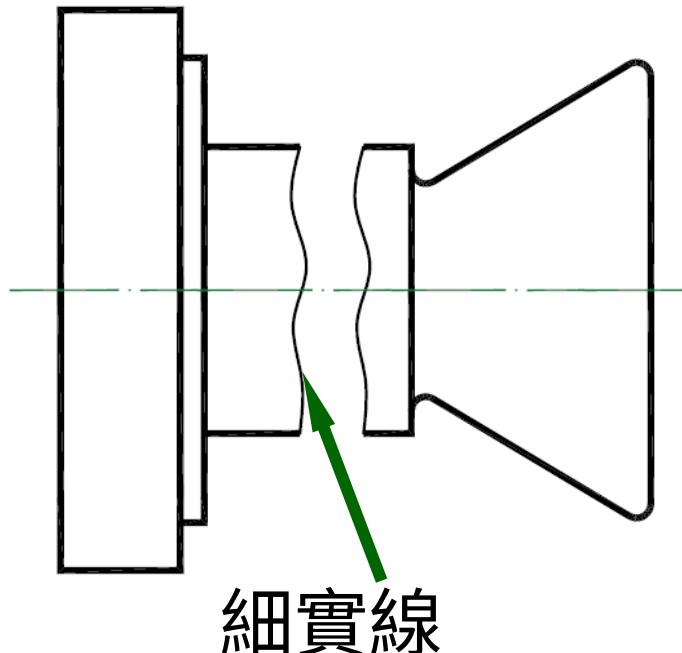
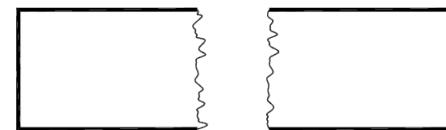
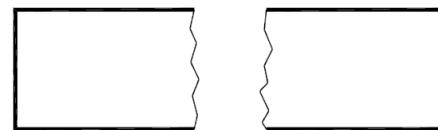
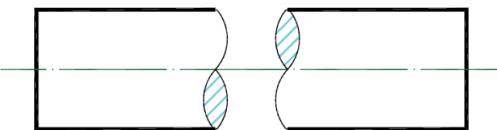
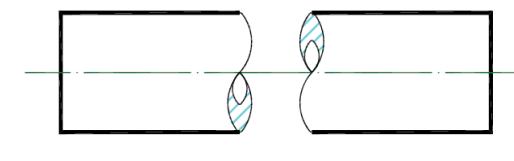
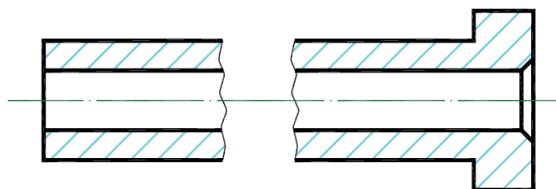
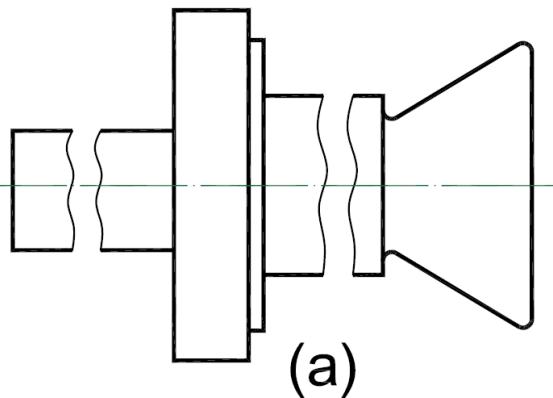
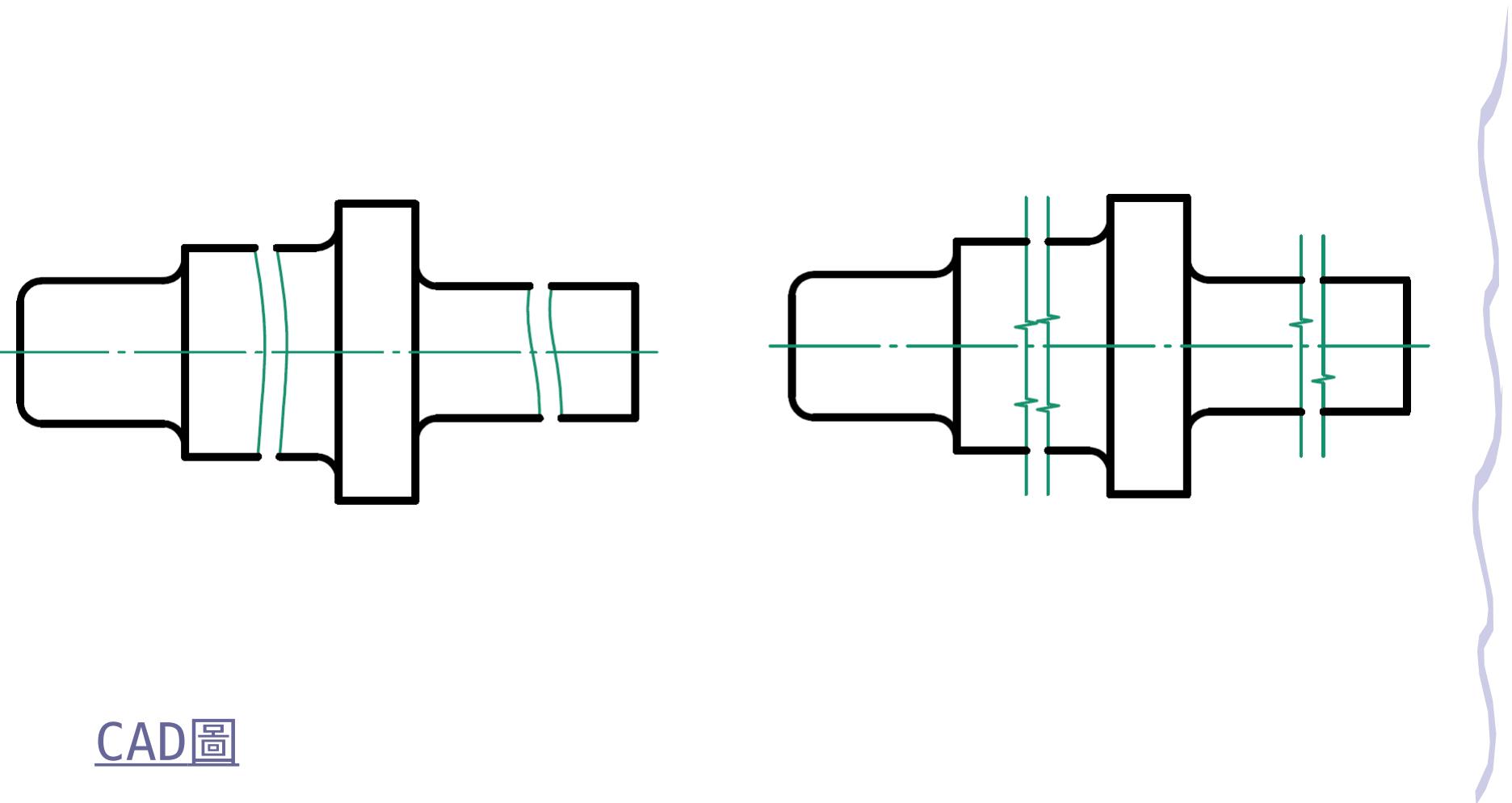


圖 13.45 中斷視圖 2/3



CAD圖

圖 13.45 中斷視圖 3/3

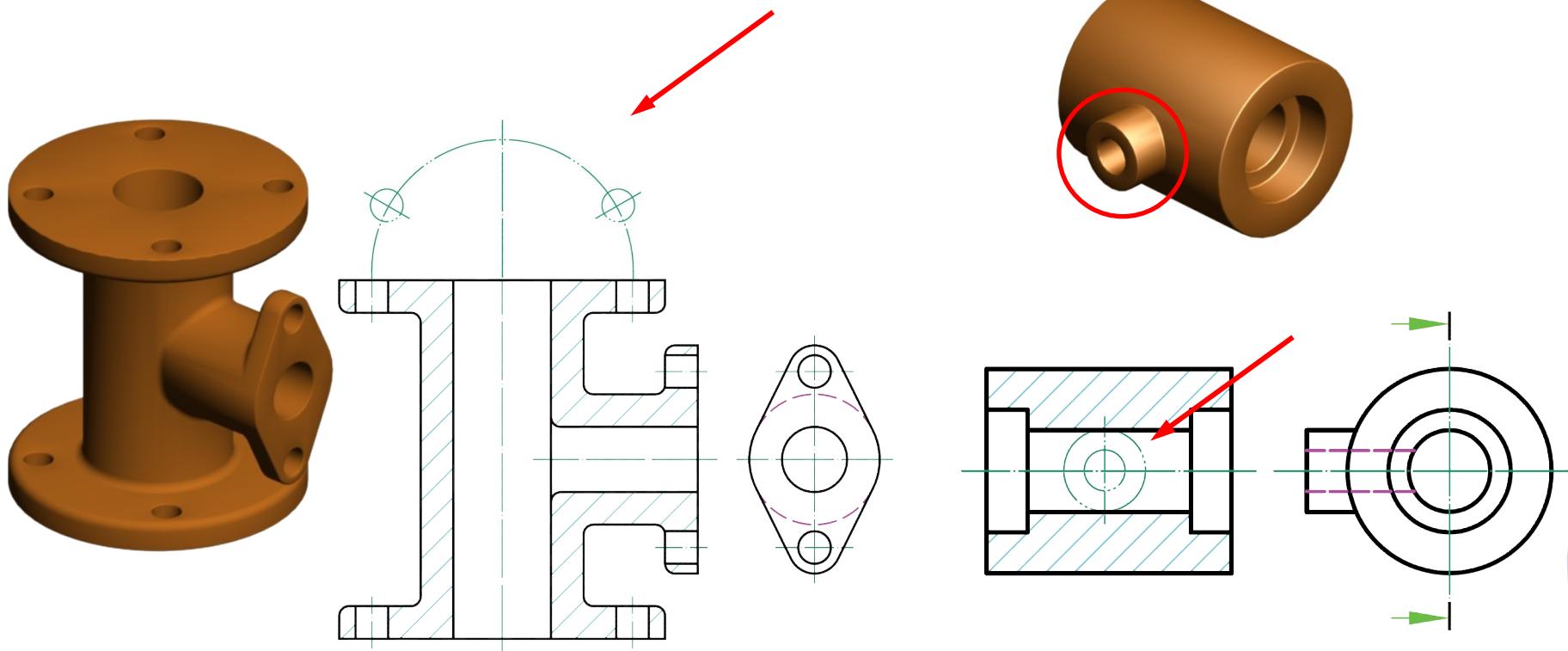


CAD圖

13.13.3 虛擬視圖 - 1/4

- 由於省略視圖（如圖 13.46(a) 所示），或為了表示其他機件之相關位置（如圖 13.46(b) 所示），而以細鏈線繪出者稱之為虛擬視圖。

圖 13.46 虛擬視圖 - 2/4

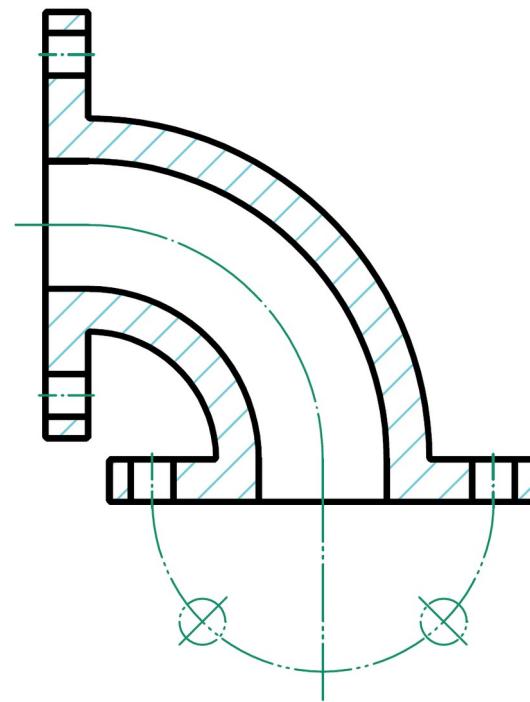


CAD圖 另一視圖之虛擬視圖

剖去部位之虛擬視圖

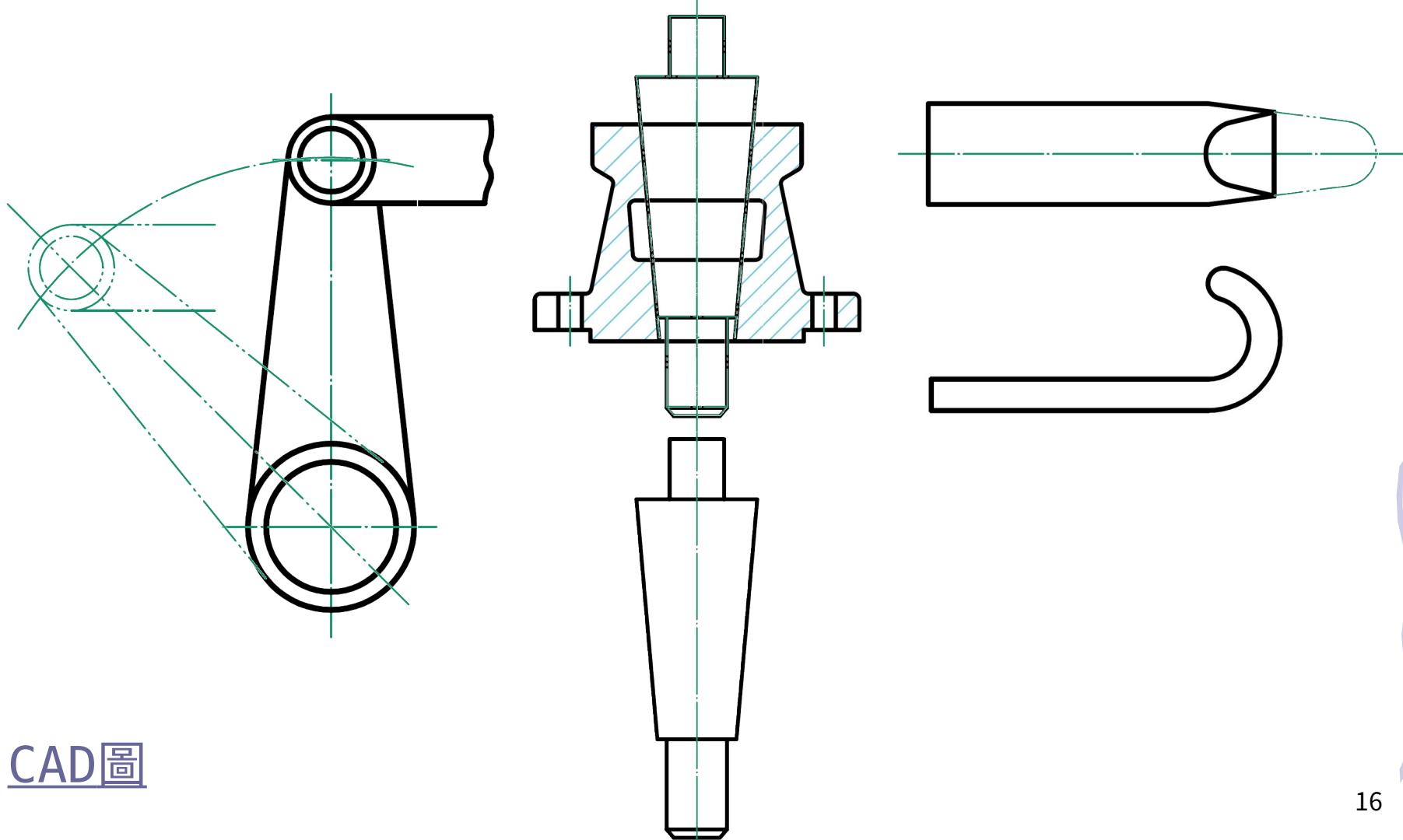
虛擬視圖 - 3/4

另一視圖之虛擬視圖



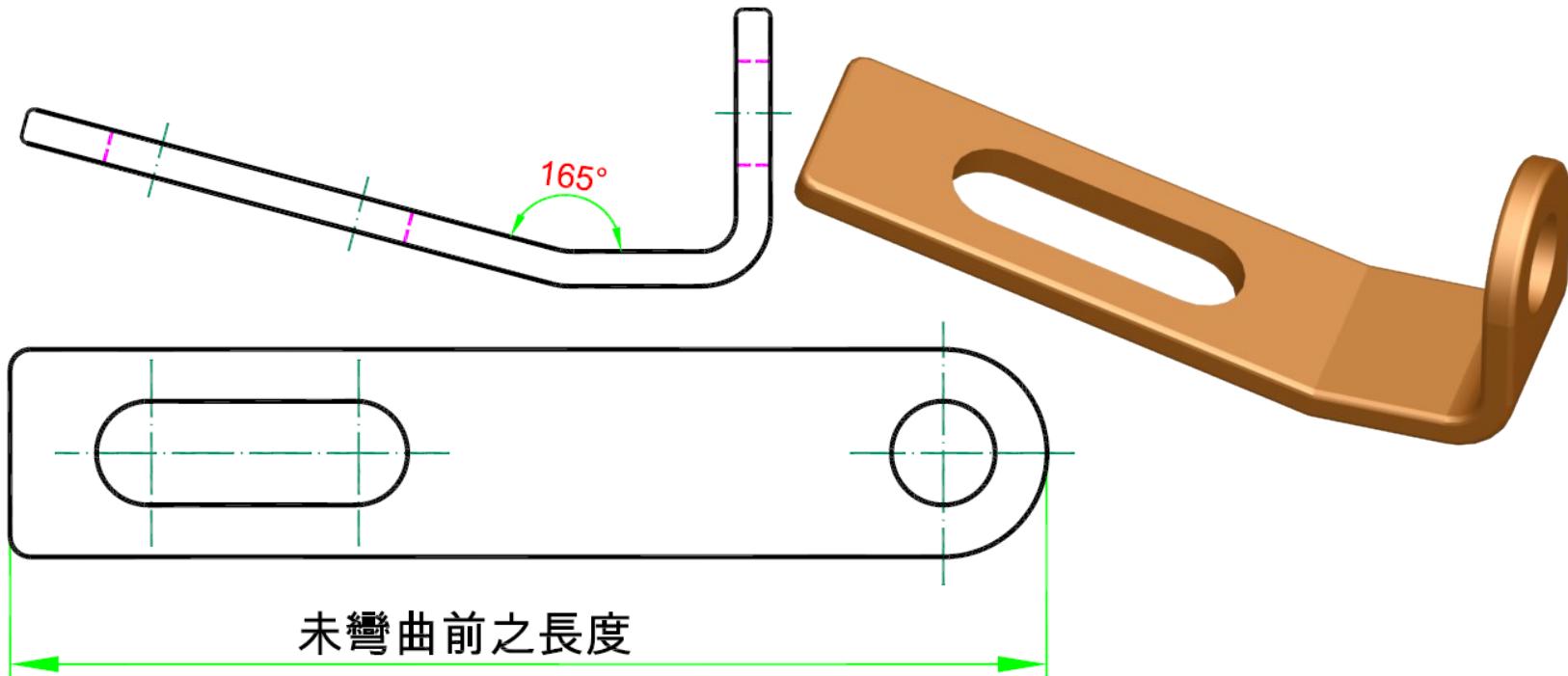
虛擬視圖 - 4/4

移動位置之虛擬視圖 關係零件之虛擬視圖 成形前輪廓之虛擬視圖



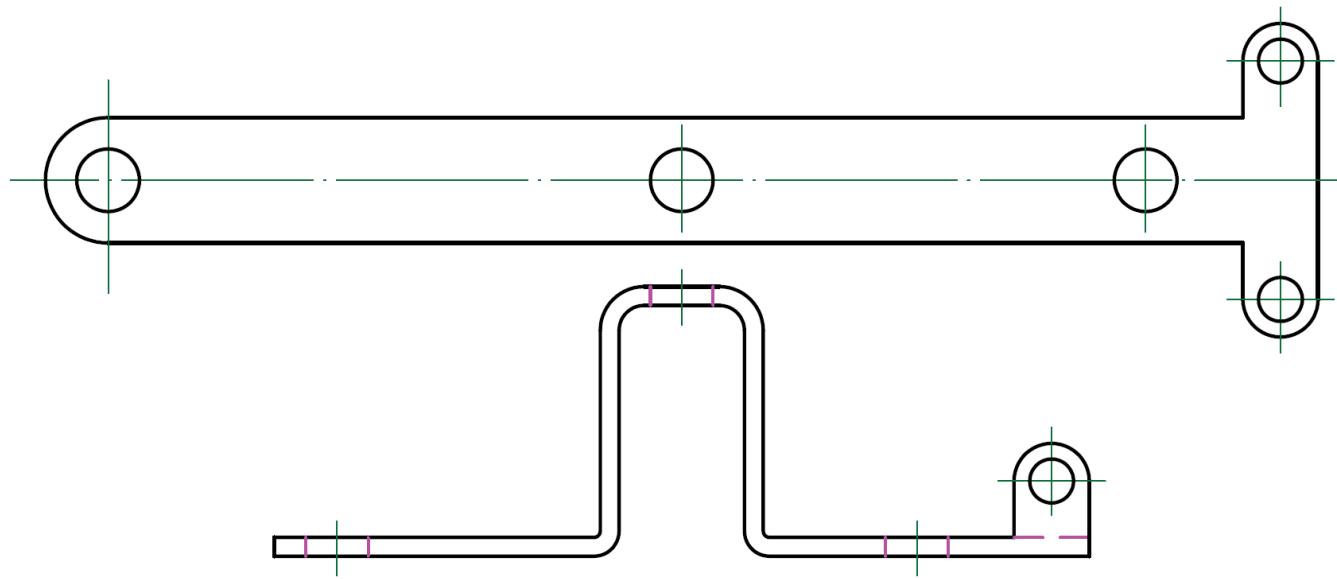
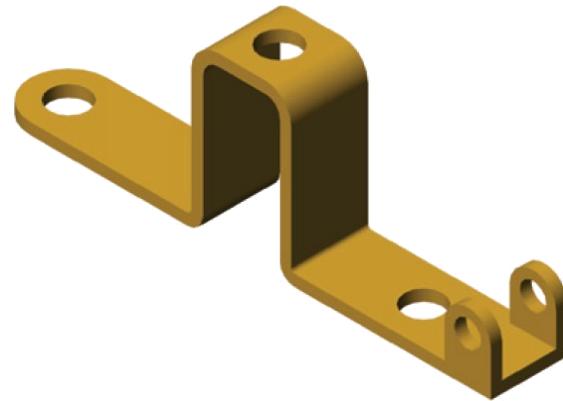
13.13.4 展開圖

- 薄板衝壓成型之物件，為了讀圖與配合加工的方便，其中一視圖以正投影繪出，另一視圖以展開圖表視物件未衝壓折彎前之形狀。



CAD圖

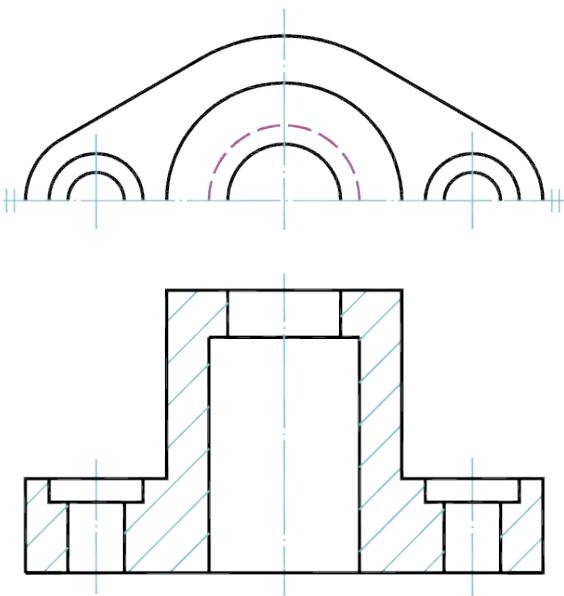
展開圖例



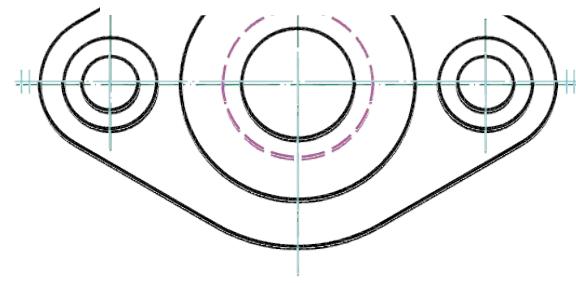
13.15.5 半視圖

- 對於完全對稱之物體，為了節省繪圖空間或繪圖時間，可假想將物體切除對稱之一半後繪其視圖，稱之為半視圖。
- 切除一半後之視圖，須能使其對應視圖呈現完整外型為原則，如圖 13.48 所示，故剖視圖與非剖視圖保留不同之半視圖。

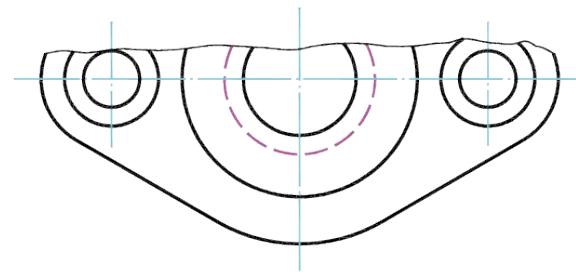
圖 13.48 半視圖 1/2



CAD圖 (a)



例題CAD圖 (b)



(c)

圖 13.48 半視圖 2/2

亦可在對稱軸之中心線，其兩端以兩條垂直於中心線之細實線標明，其長度等於標註尺度數字字高 h ，二線相距約為 h 之三分之一。

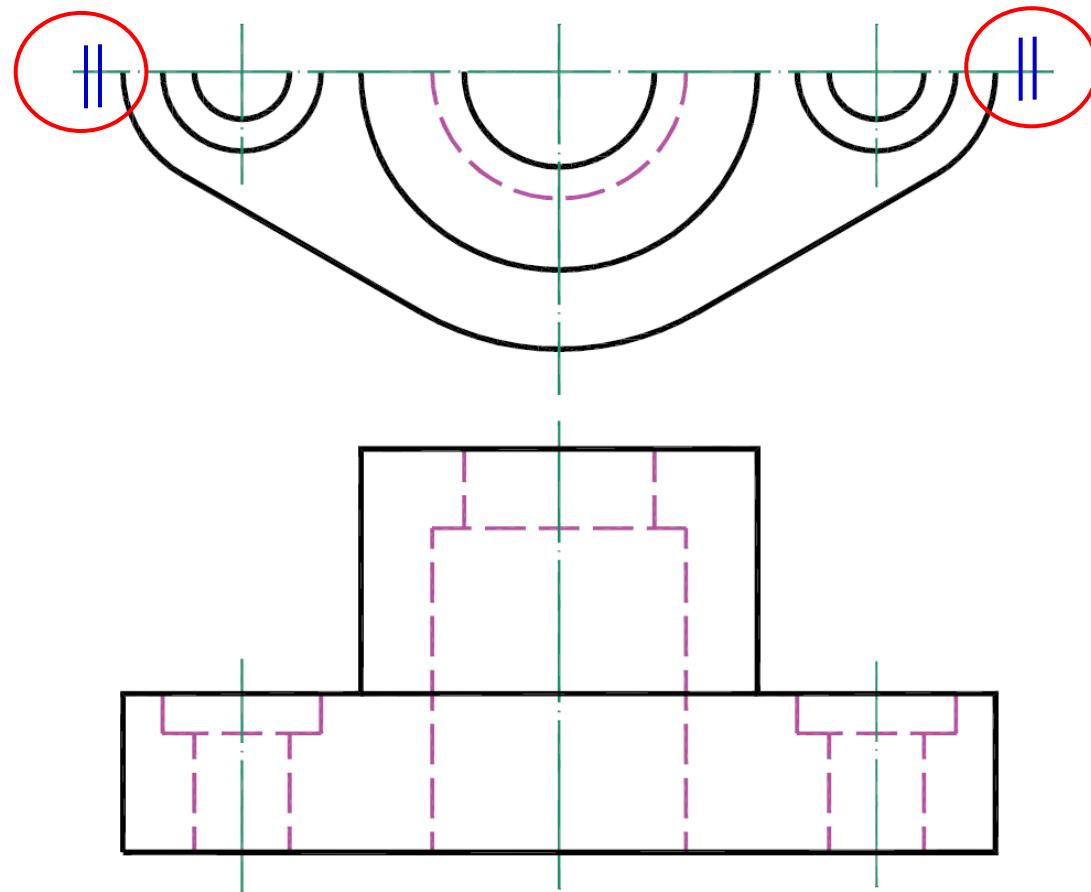
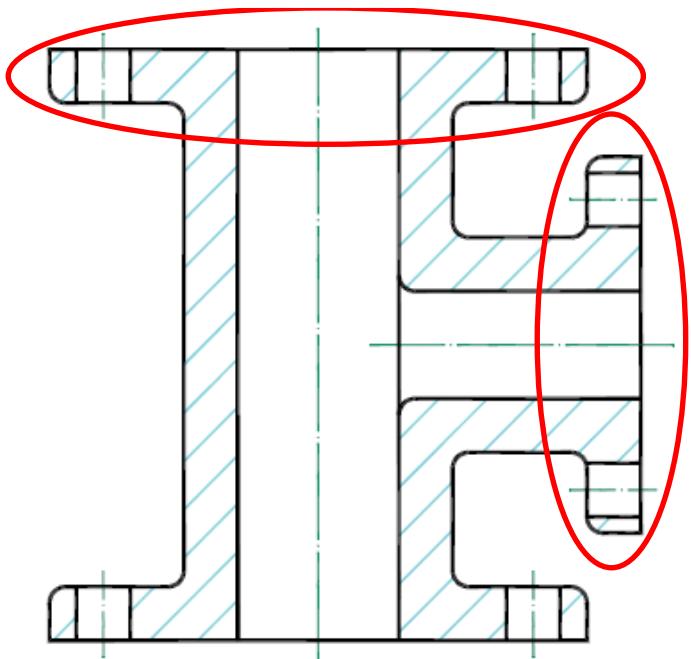


圖 13.49 局部視圖（一）



CAD圖

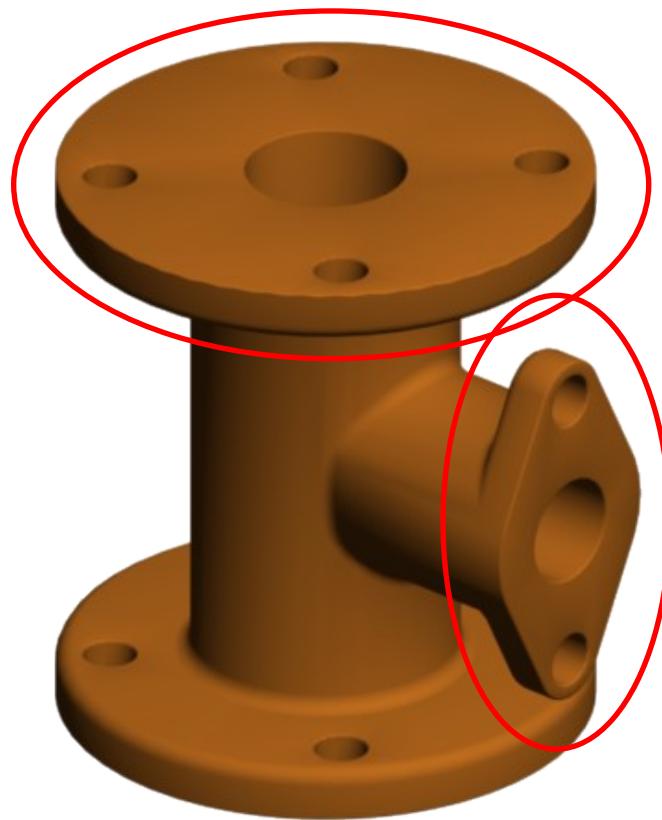
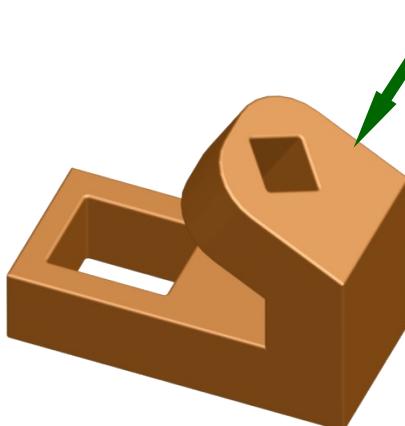
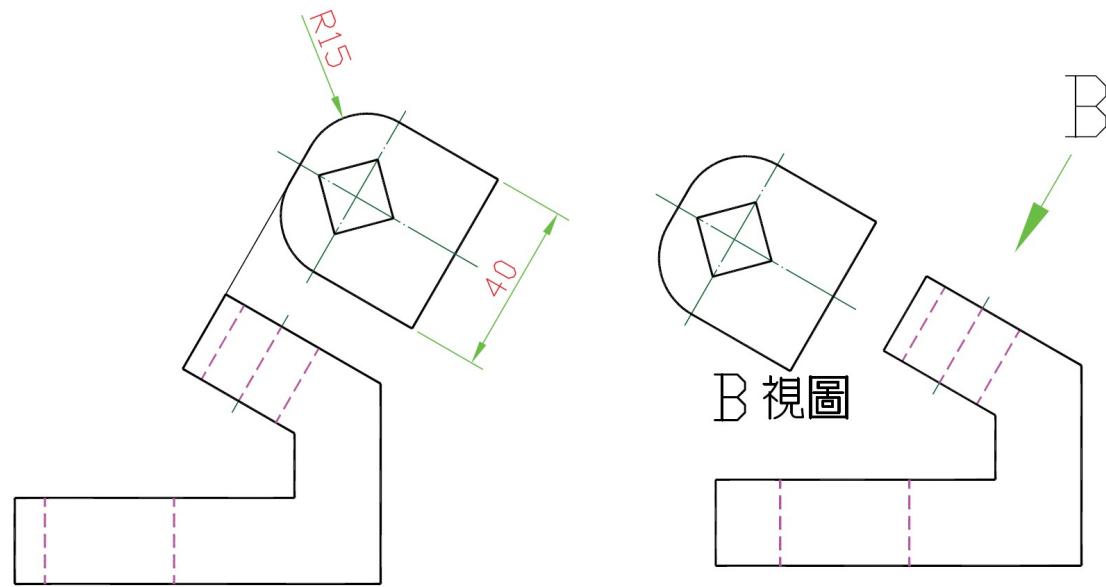
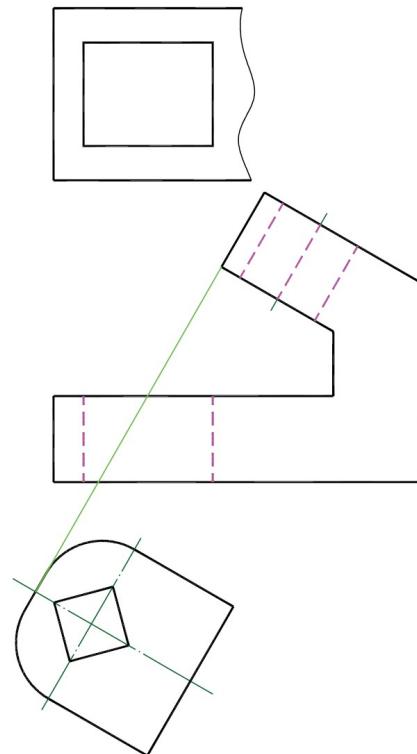


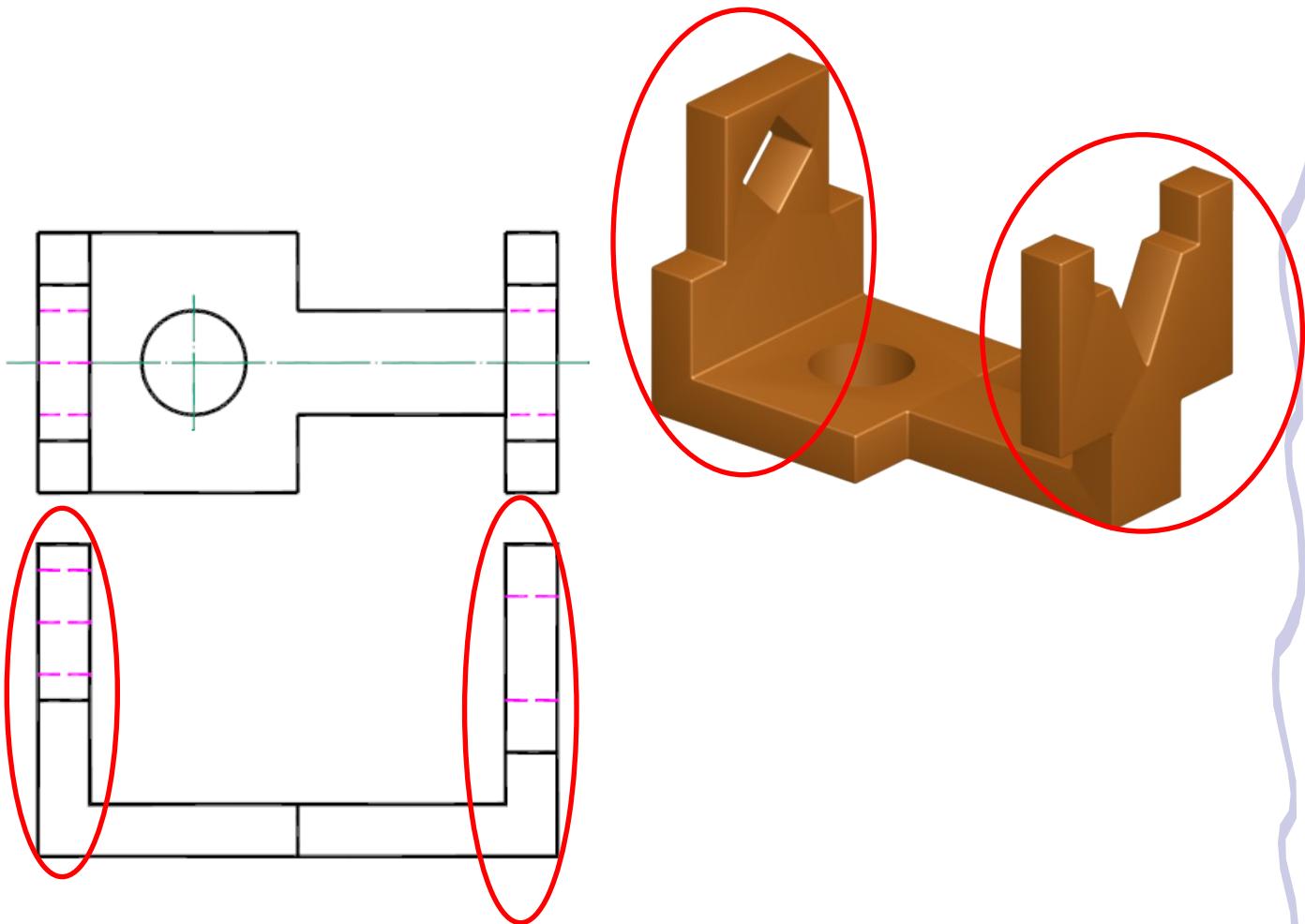
圖 13.50 局部視圖 (二)



第三角

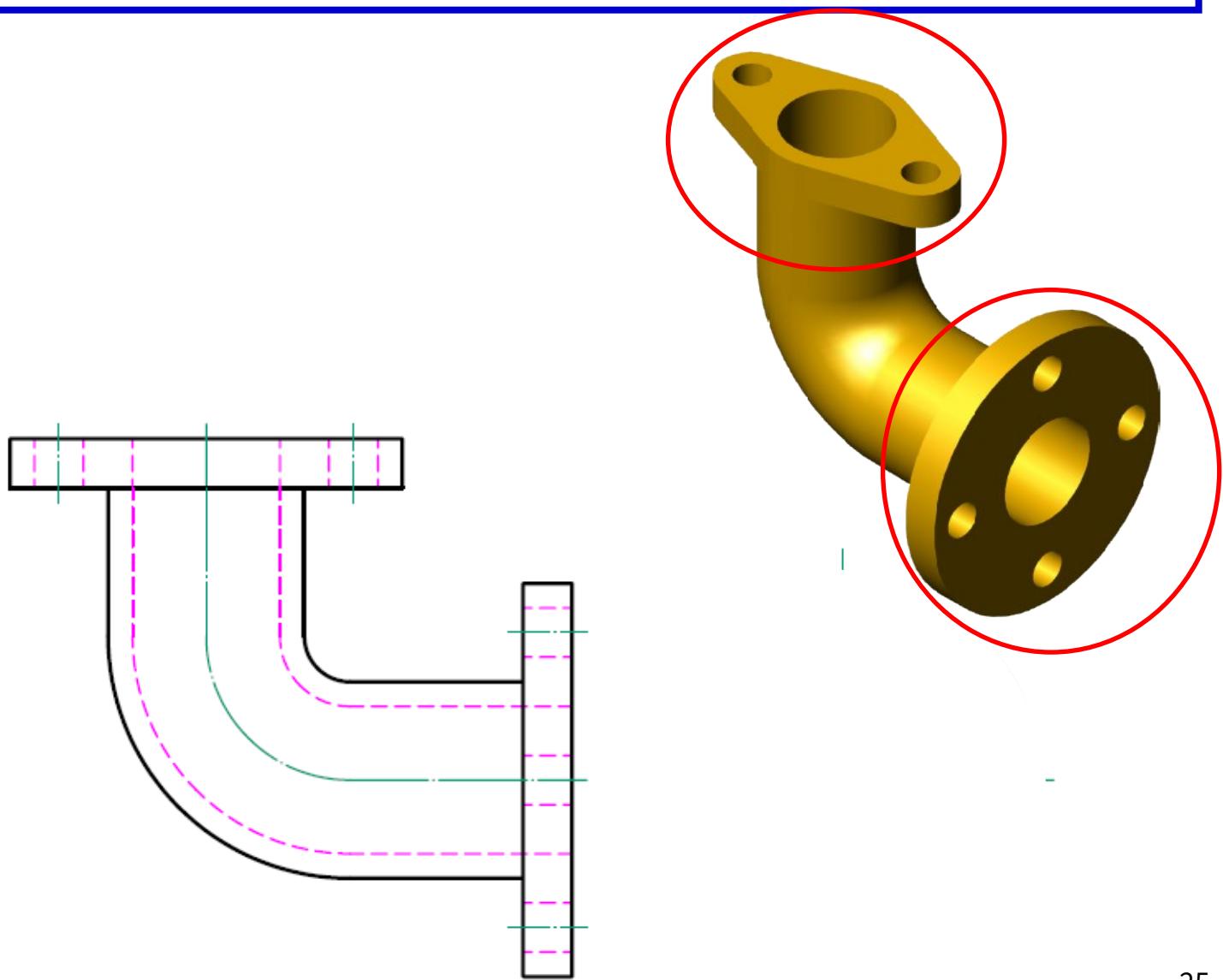
局部視圖平行移動

圖 13.51 局部視圖 (三)

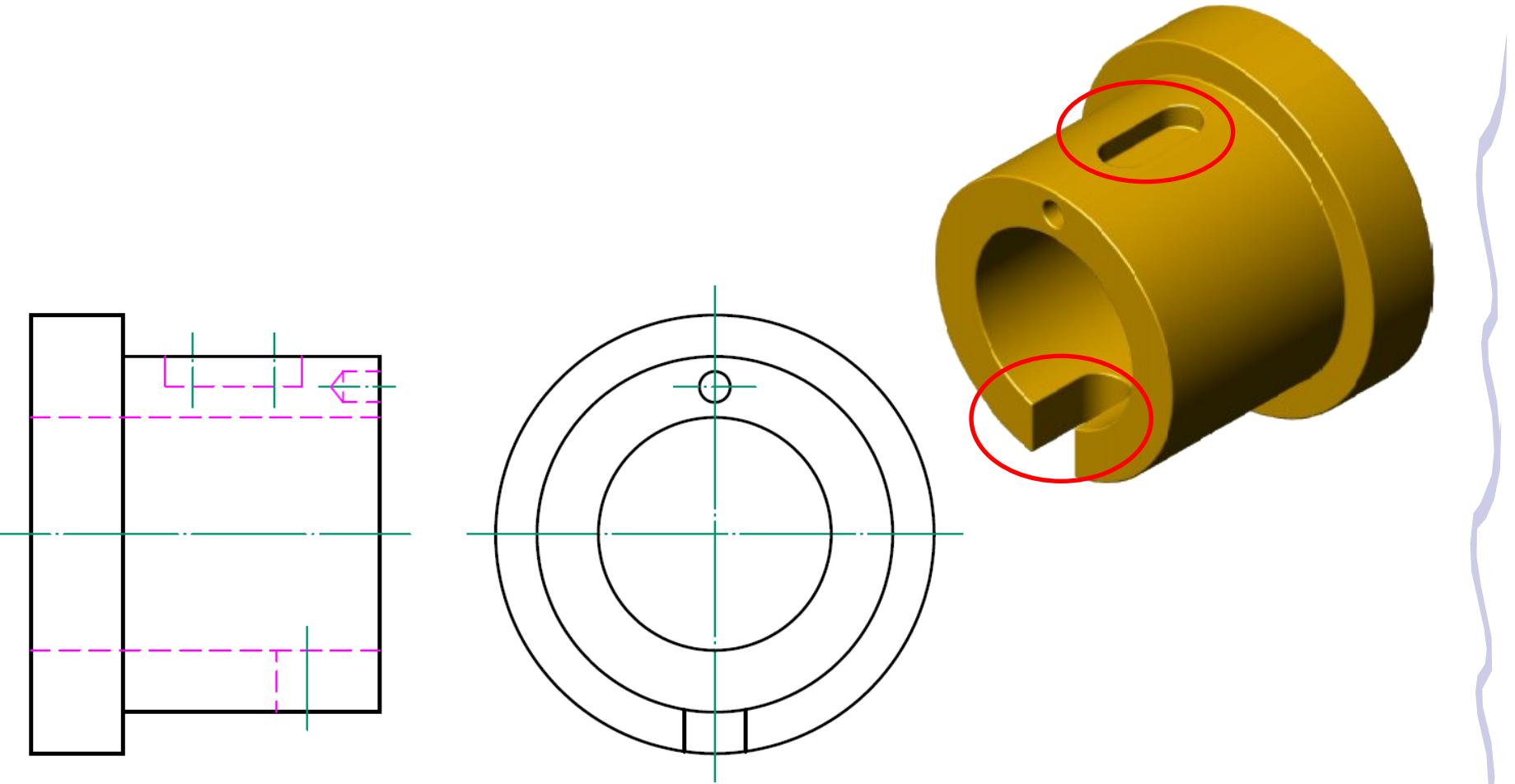


CAD圖

局部視圖 -4



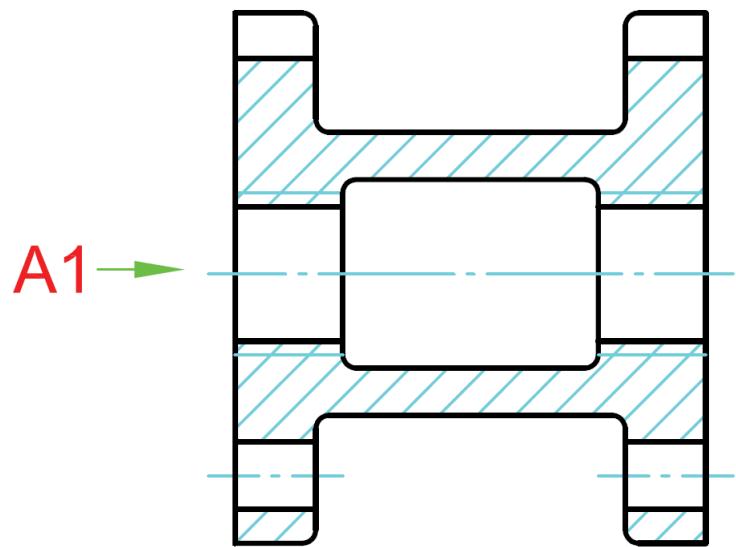
局部視圖



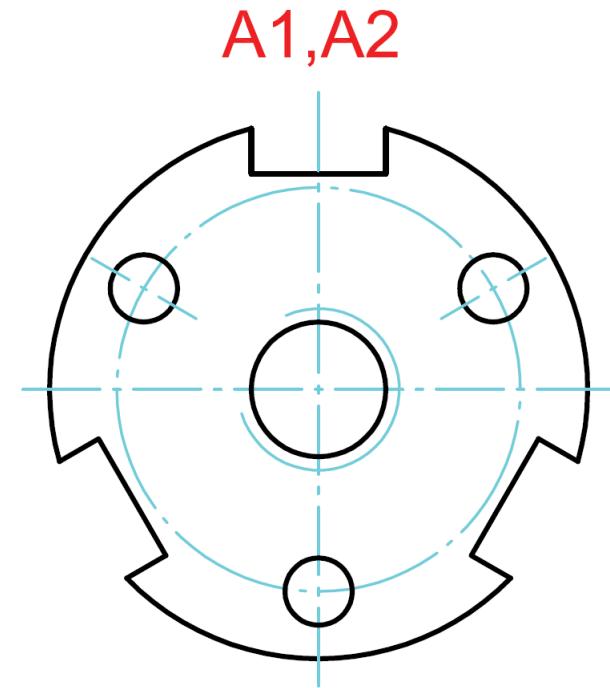
CAD圖

局部視圖

多個方向之視圖或局部視圖完全相同之繪法

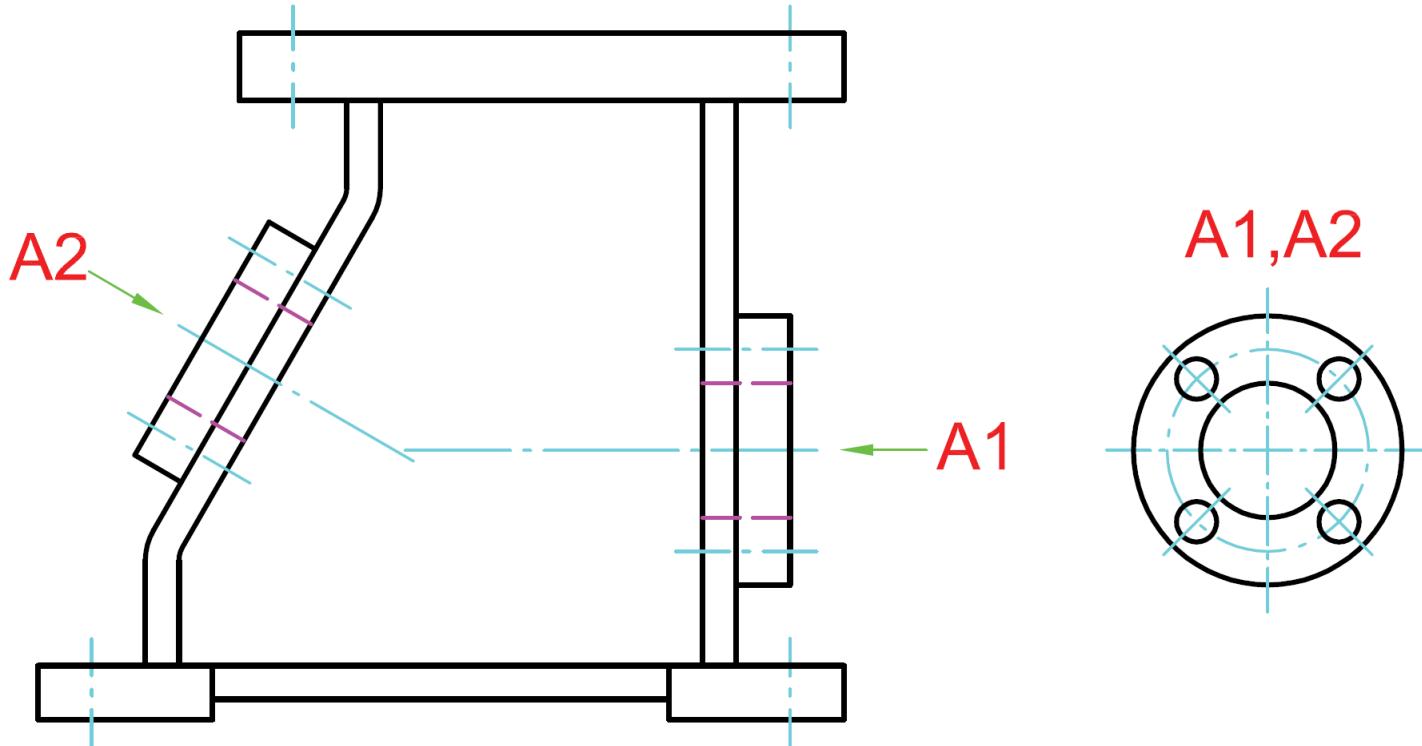


CAD 圖



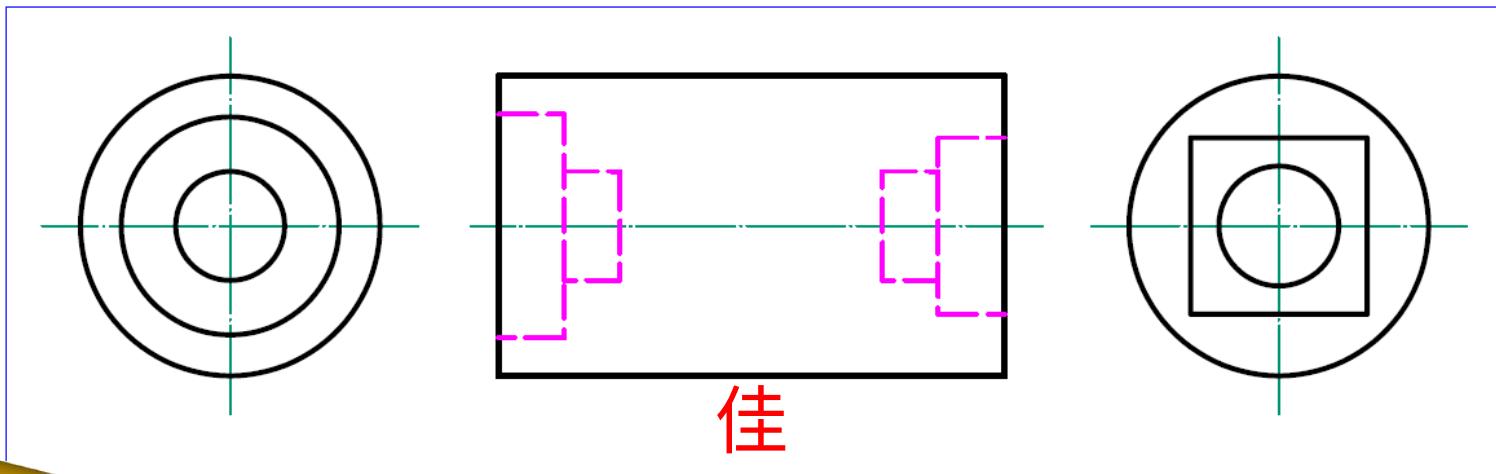
局部視圖

多個方向之視圖或局部視圖完全相同之繪法

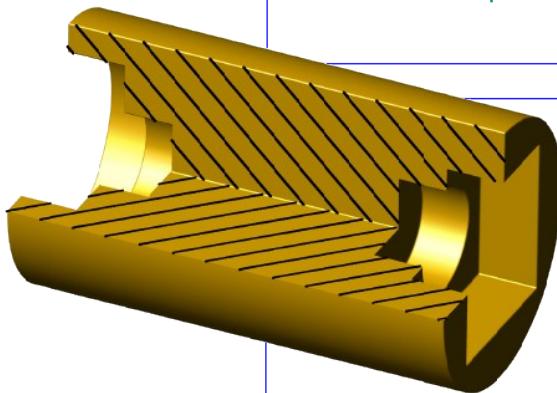


CAD 圖

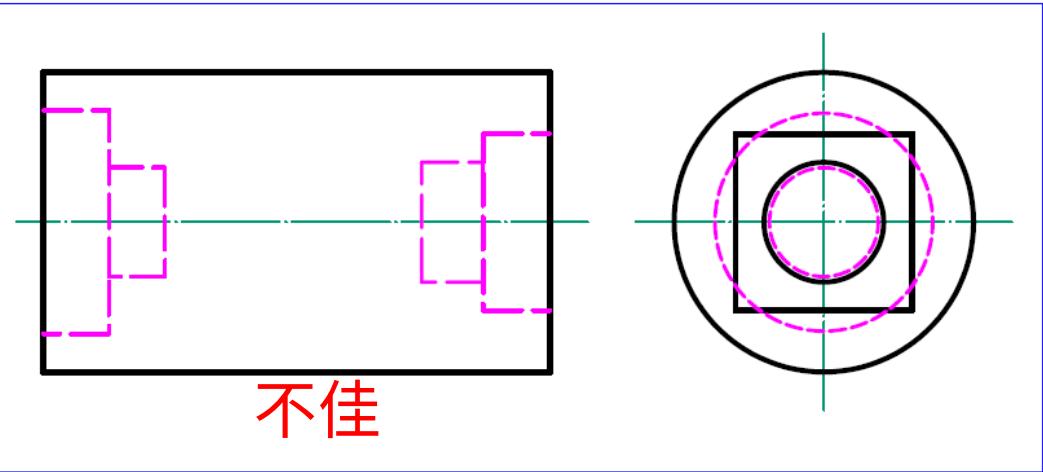
局部視圖



佳

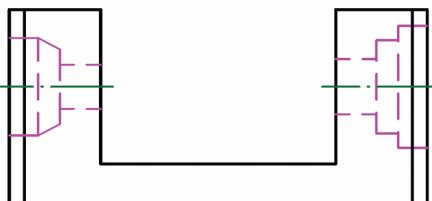


CAD圖



不佳

局部視圖

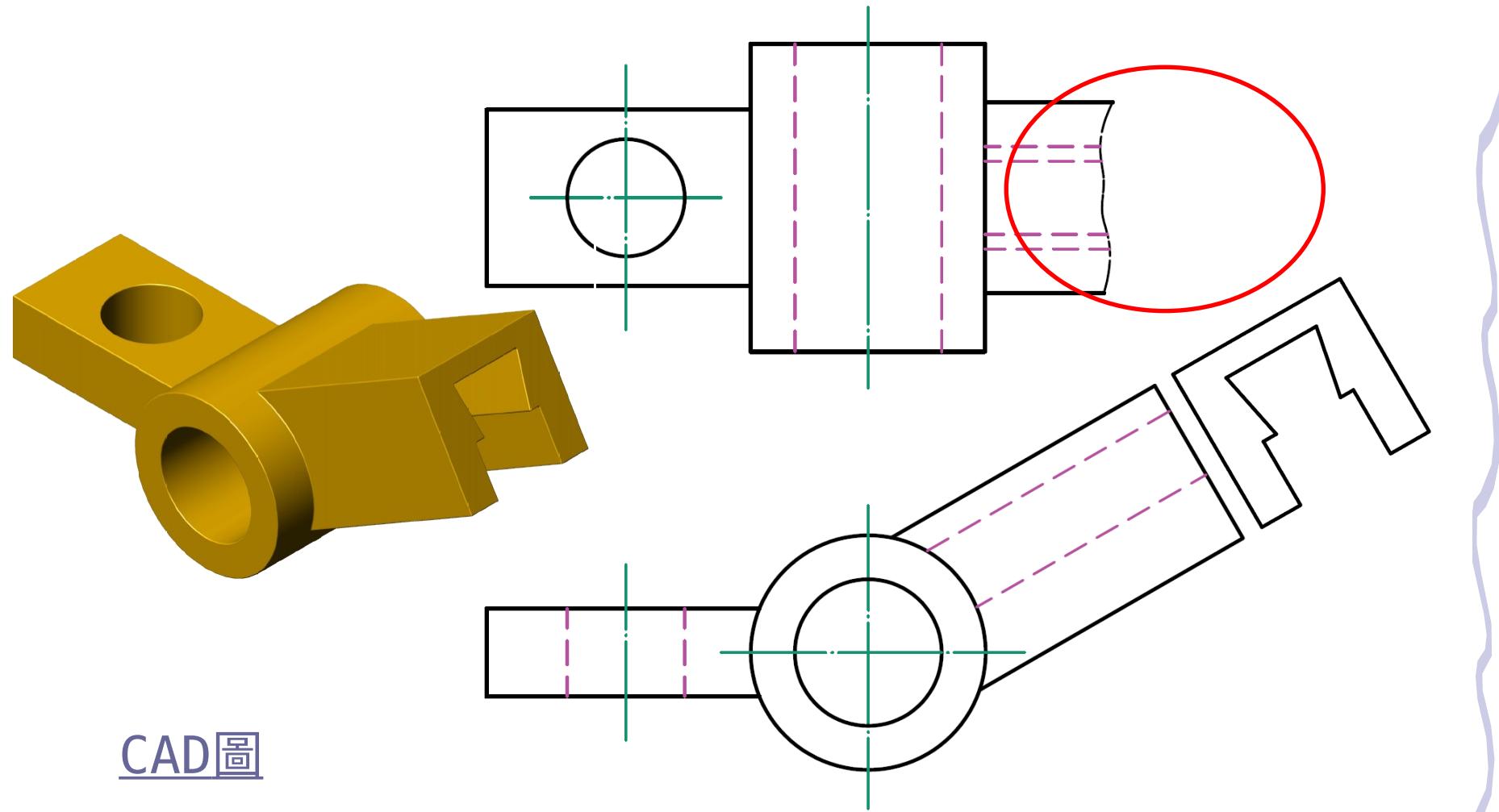


佳

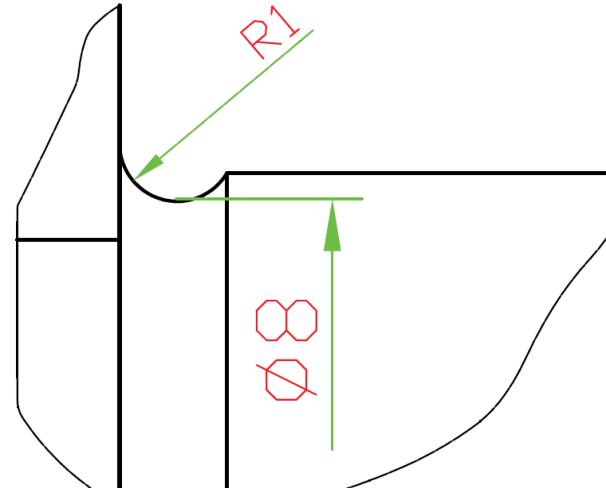
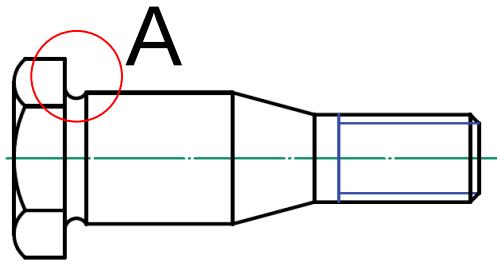
CAD圖

不佳

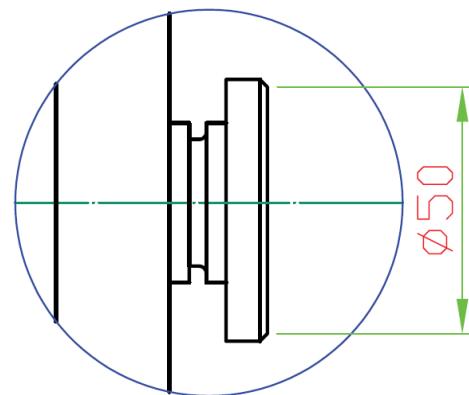
局部視圖（輔助視圖）



局部詳圖



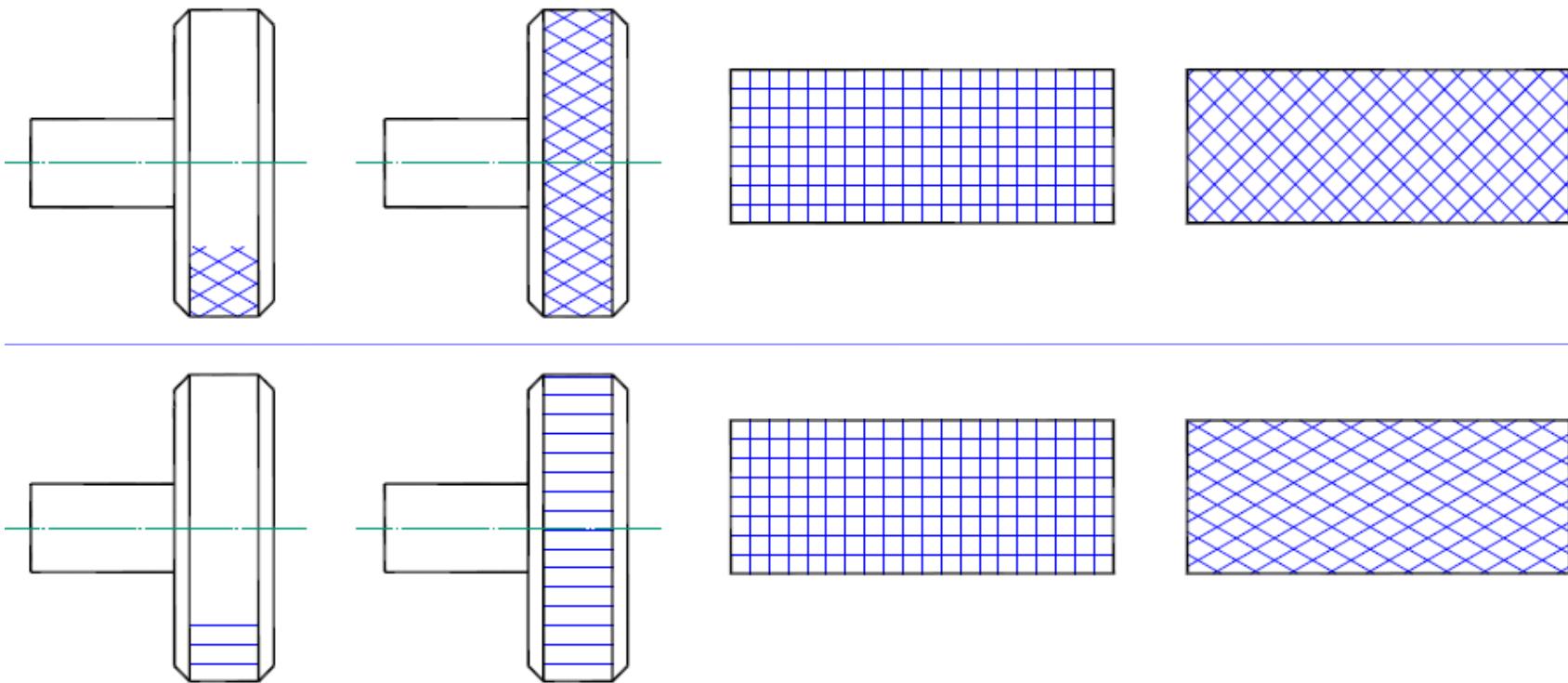
A(5:1)



B(5:1)

CAD圖

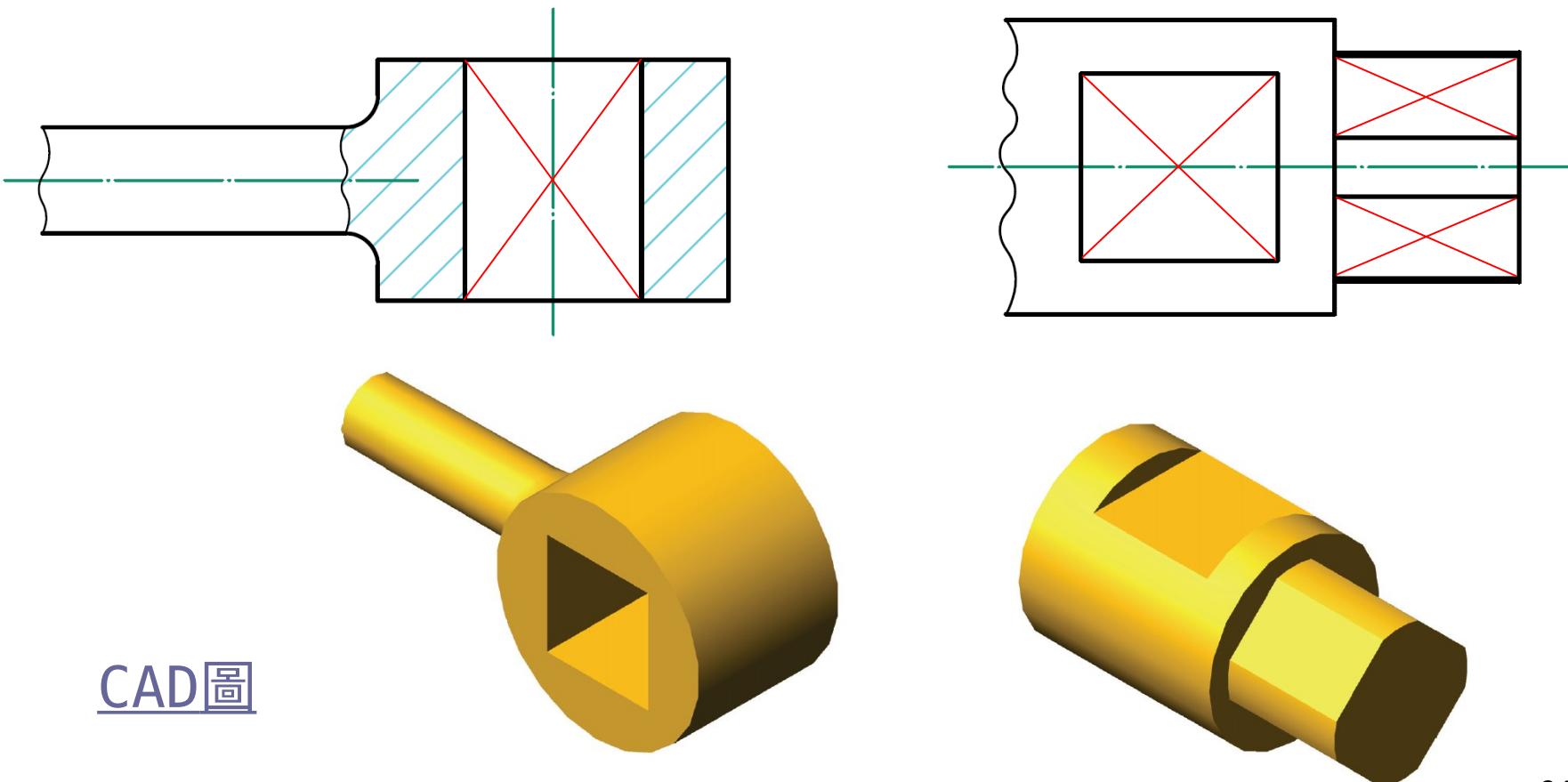
滾花、金屬網、紋面板



CAD圖

圓柱圓錐削平表示法

圓柱，圓錐削平表示法 圓柱或圓錐有一部份削而未繪出側視圖時，應在平面處以交叉對角細實線表示之



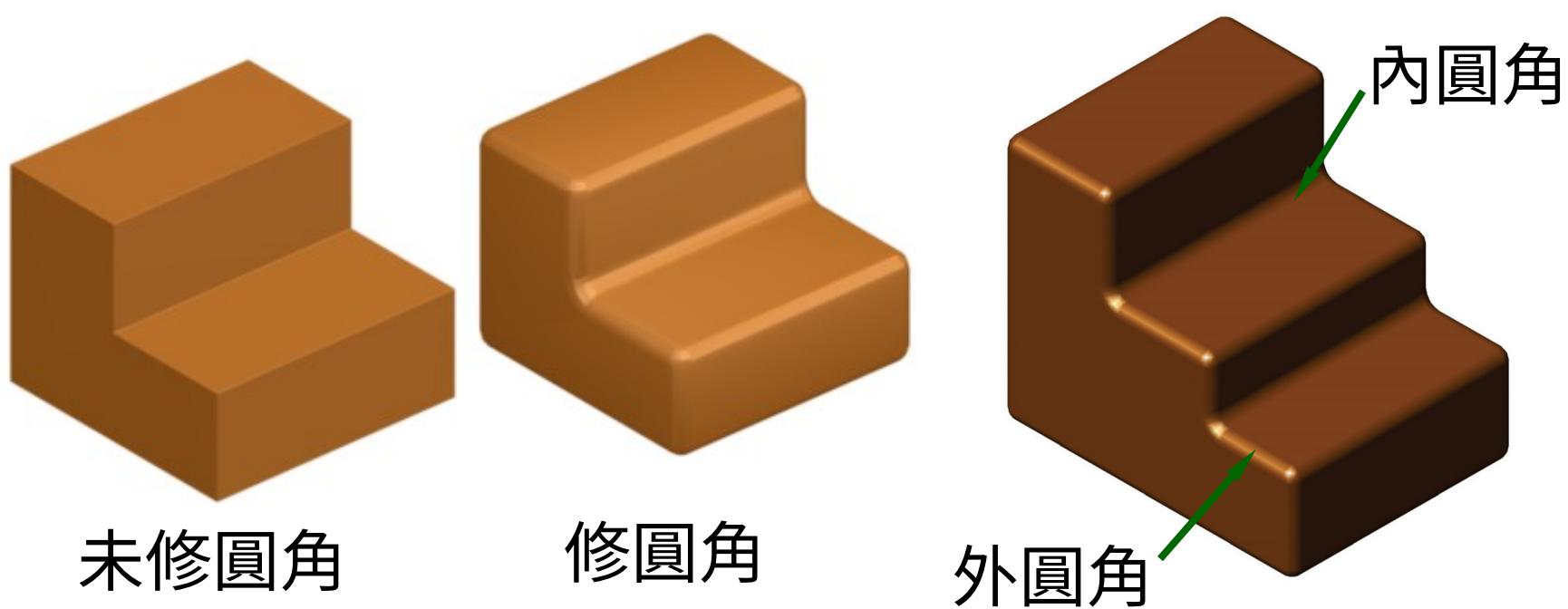
CAD圖

13.14 圓角

機件在製造過程中，在其表面之轉角常會去角而製成圓角，其主要目的如下：

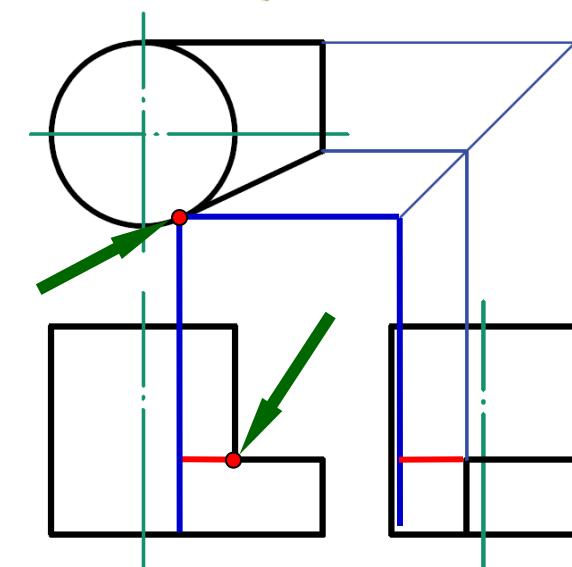
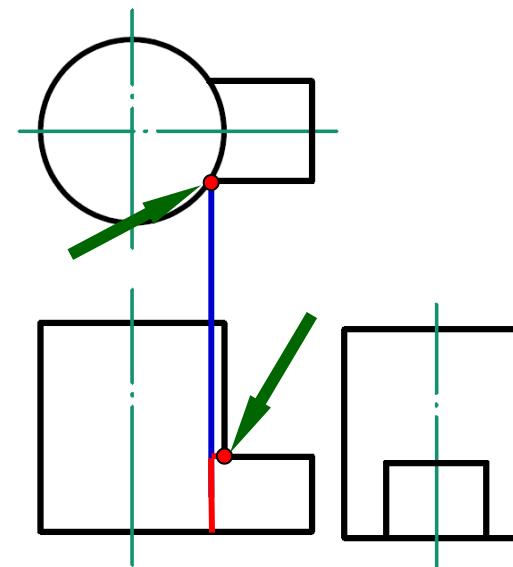
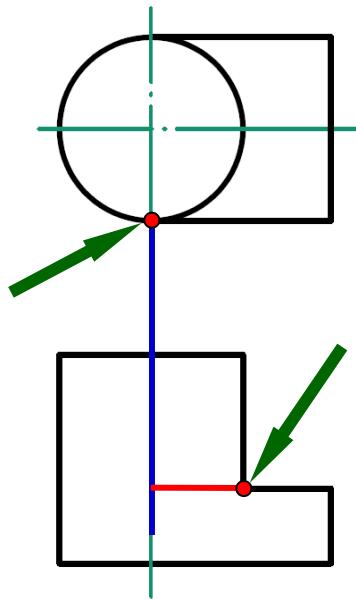
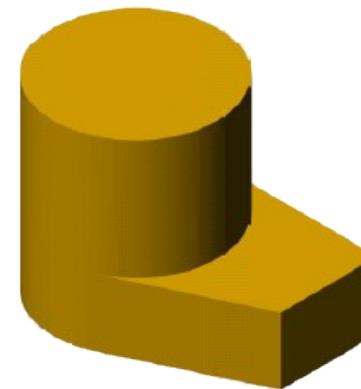
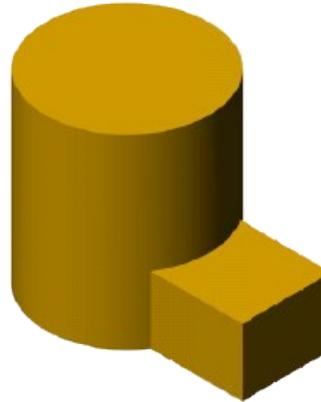
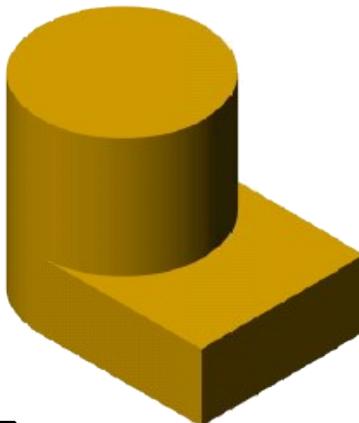
- 減少鑄件冷卻時產生內應力。
- 使模造件易於退模，或模造過程中原料易於流動。
- 減少機件外表之銳利邊緣，使易於使用或增加強度等。
- 外角去角成弧者稱之為外圓角，內角去角成弧者則稱之為內圓角，如圖 13.52(c) 所示。

圖 13.52 圓角



CAD圖

圓柱與角柱相交畫法（無圓角）

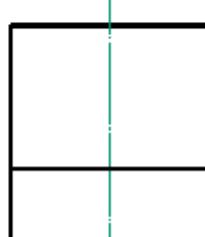
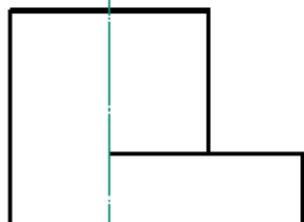
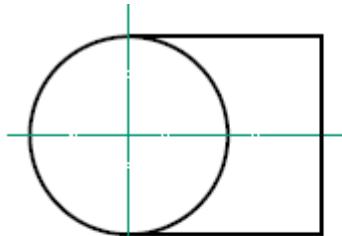


CAD圖

圓角畫法

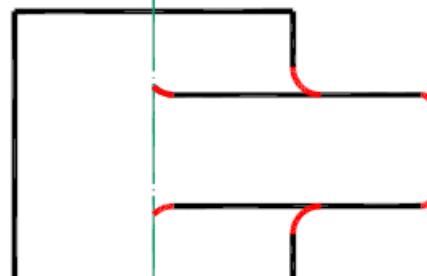
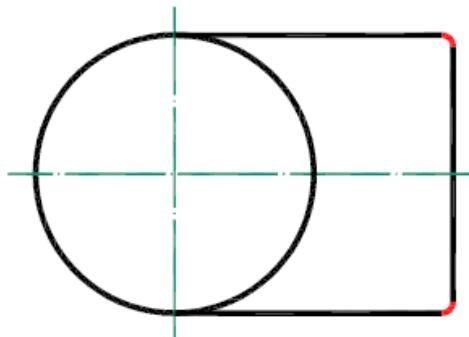
- 當物件之平面間存在圓角時，線段的結尾端點會變得不明顯，此時尾端常畫成圓弧表示平面間存在圓角。
- 圓弧之半徑與圓角相同，各種不同相交平面間圓角之畫法如圖 13.53 所示 。

圖 13.53a



無圓角

CAD圖



有圓角

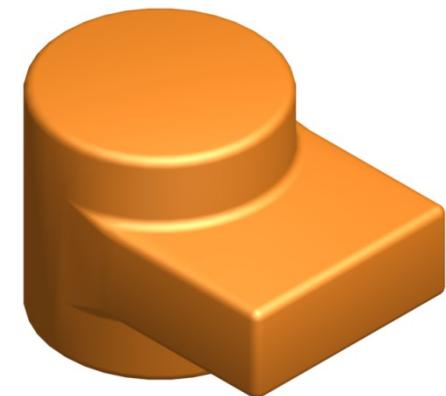
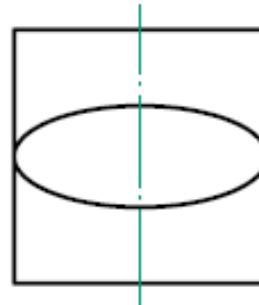
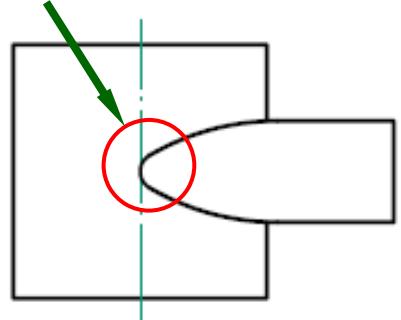
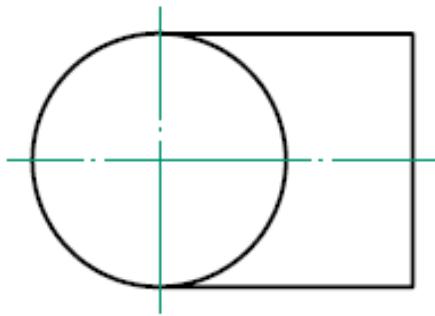
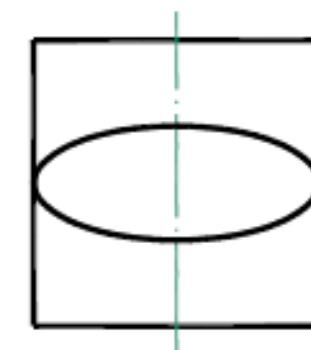
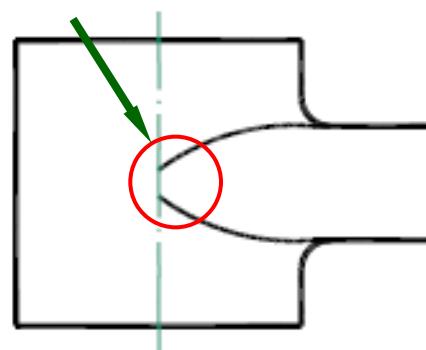
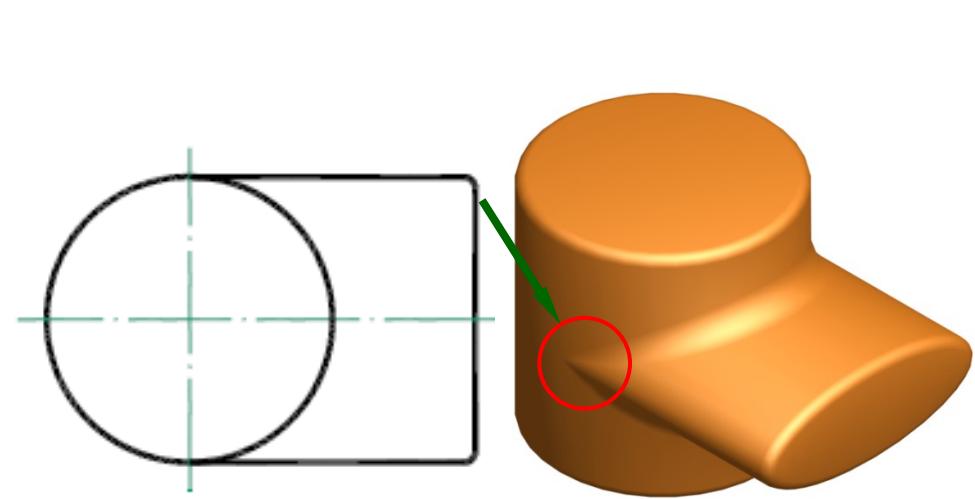


圖 13.53b



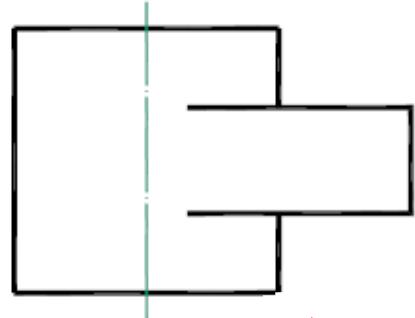
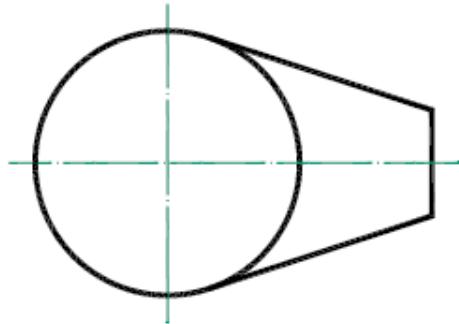
無圓角

CAD圖



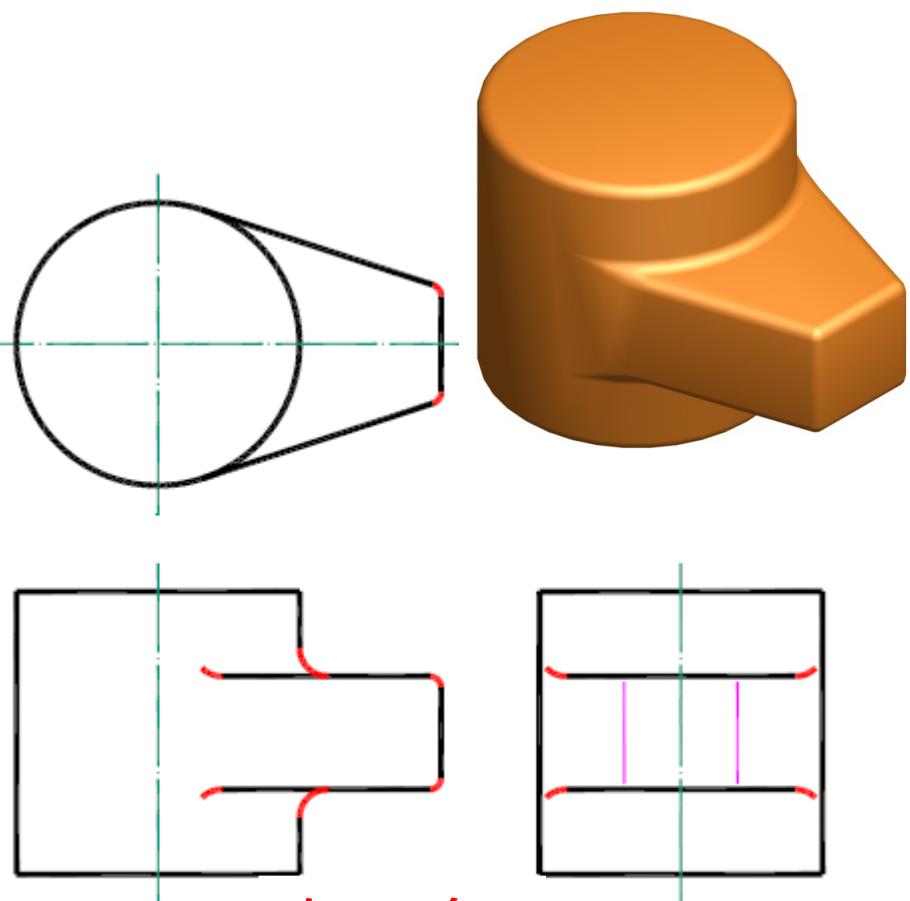
有圓角

圖 13.53c



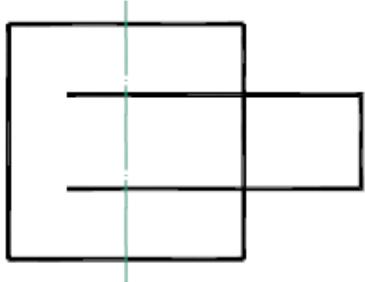
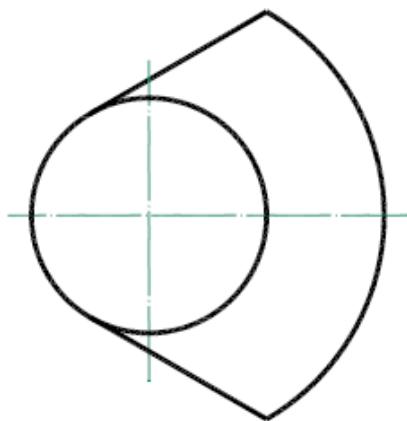
有圓角

CAD圖



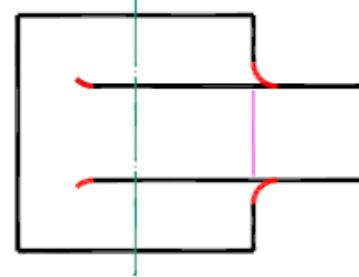
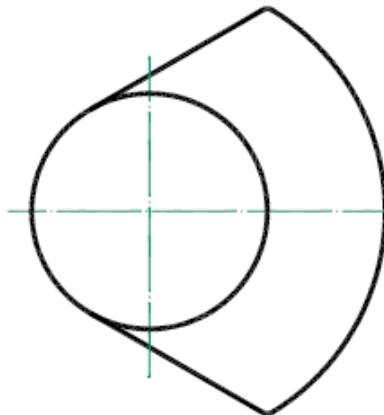
有圓角

圖 13.53d



無圓角

CAD圖



有圓角

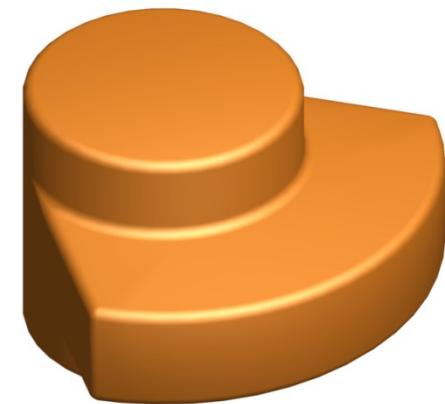
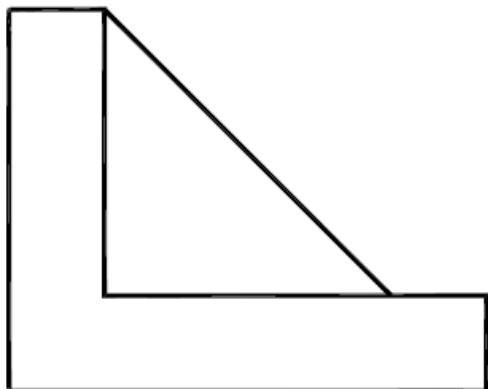
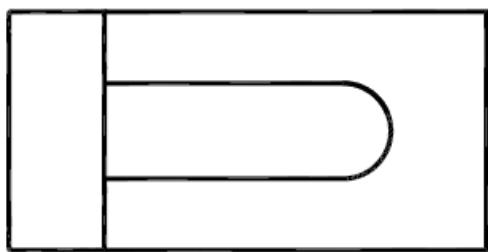
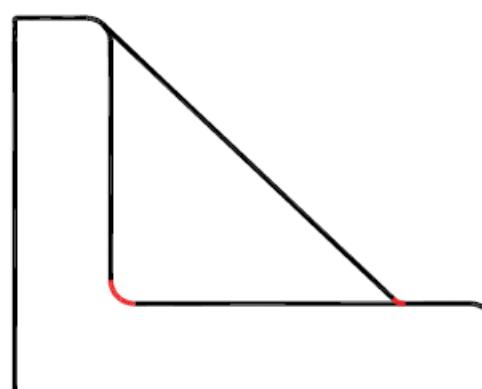
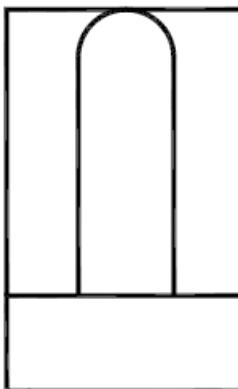
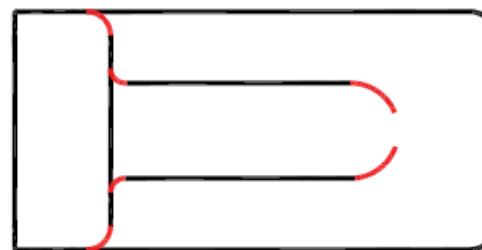


圖 13.53e



CAD圖

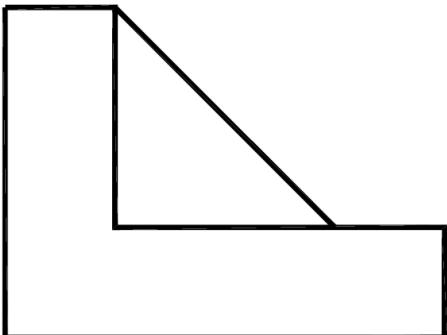
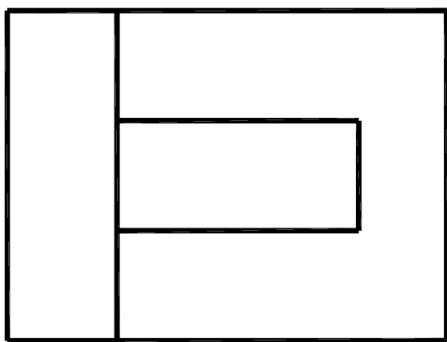
無圓角



有圓角

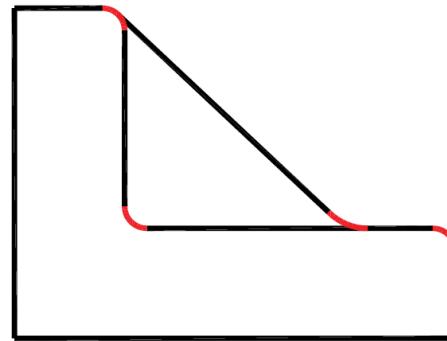
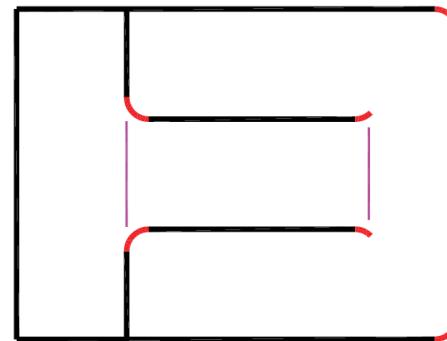


圖 13.53f



CAD圖

無圓角
無圓角



有圓角

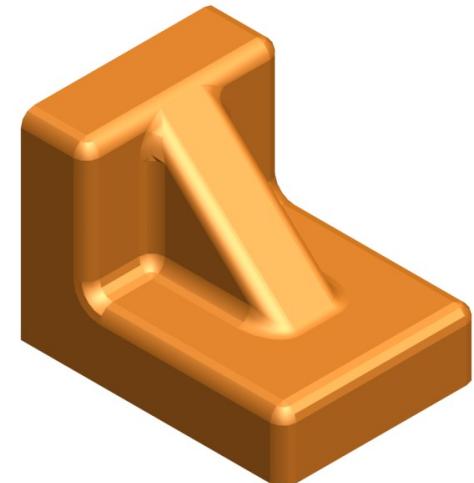
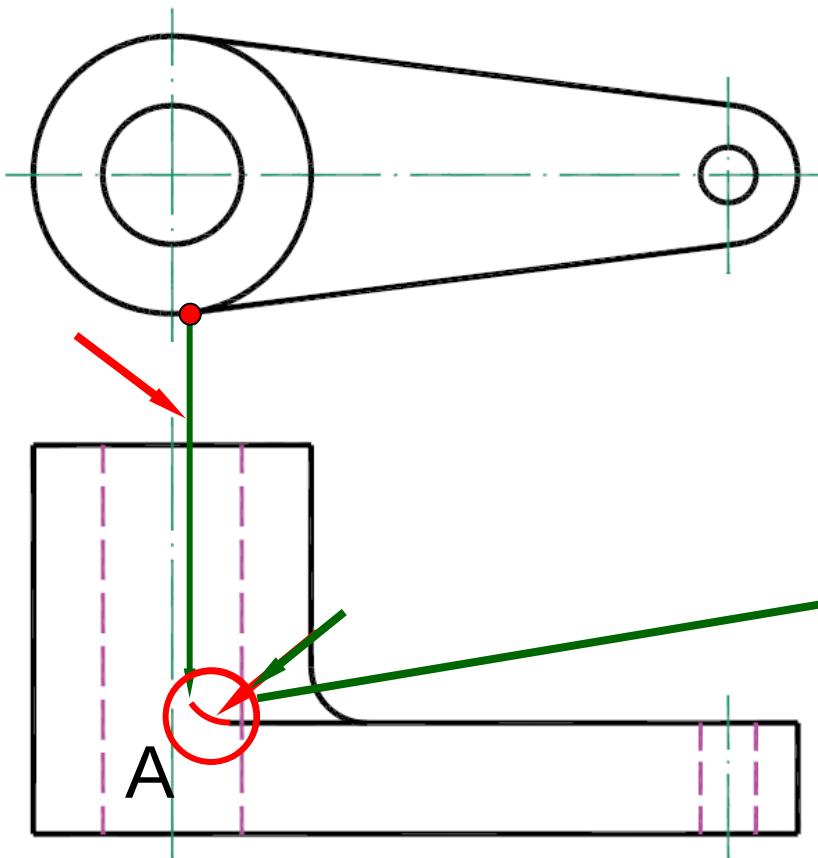


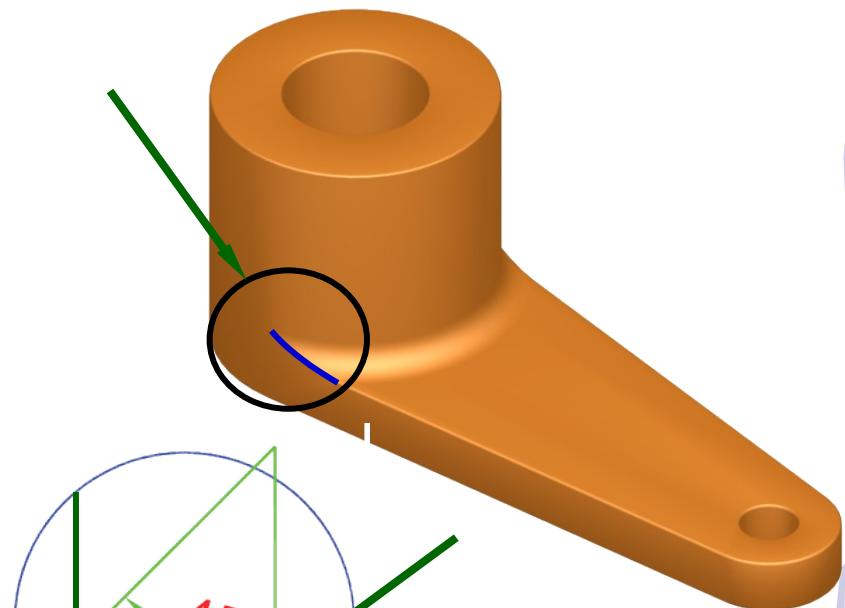
圖 13.54 圓角畫法

- 圓角半徑小於 3mm 者，通常可以徒手繪製，大於 3mm 則以儀器繪製。



CAD圖

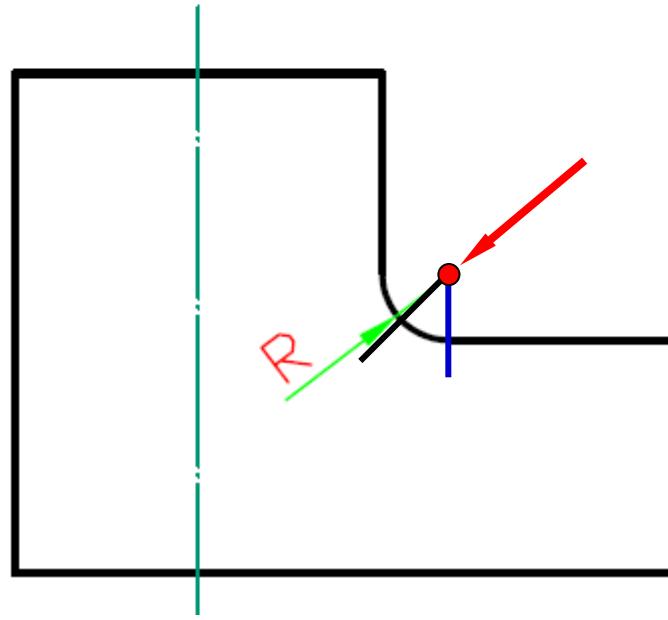
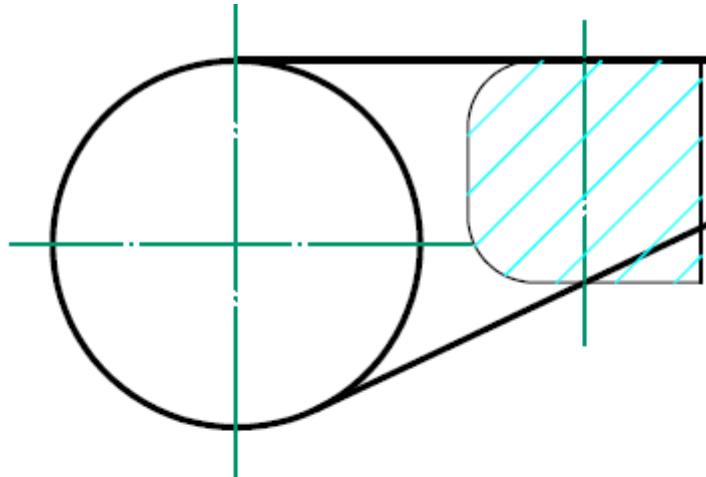
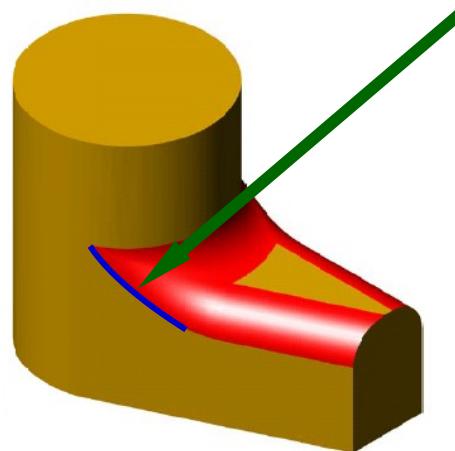
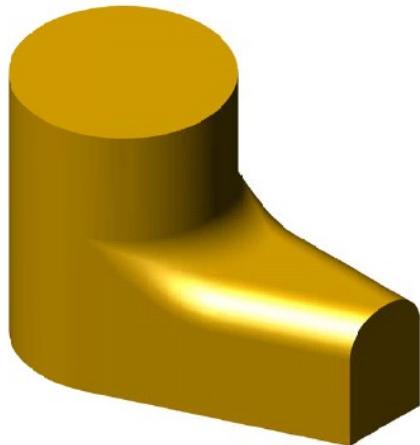
CAD-AV
I



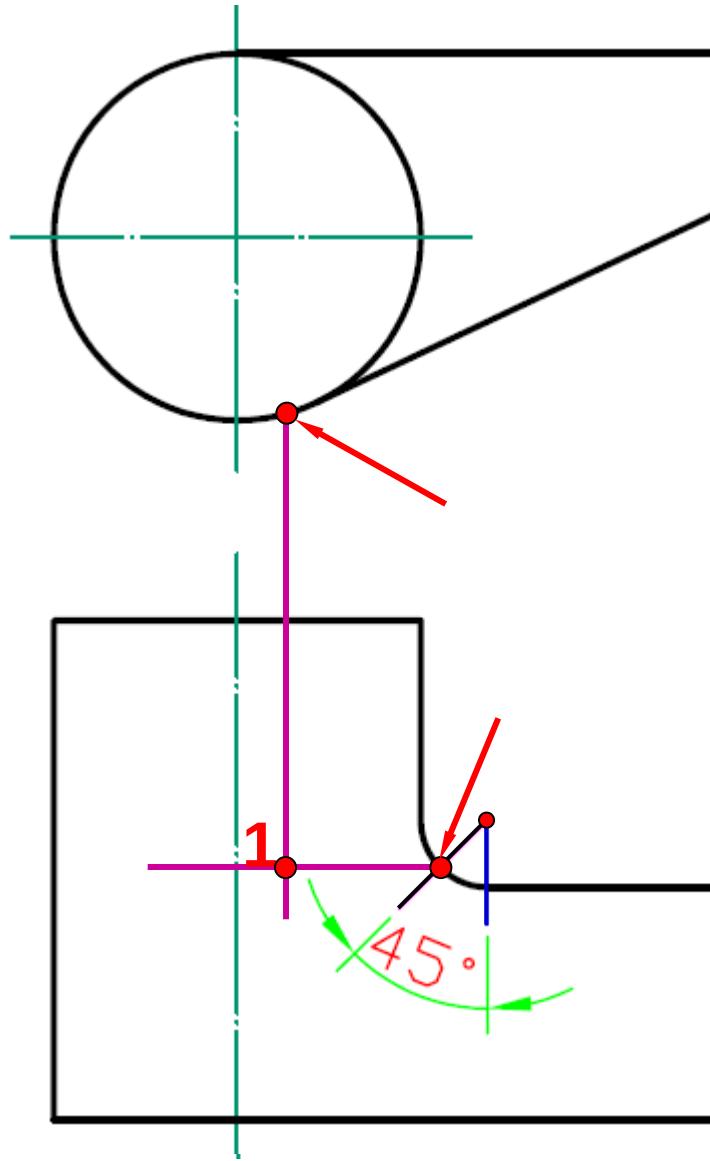
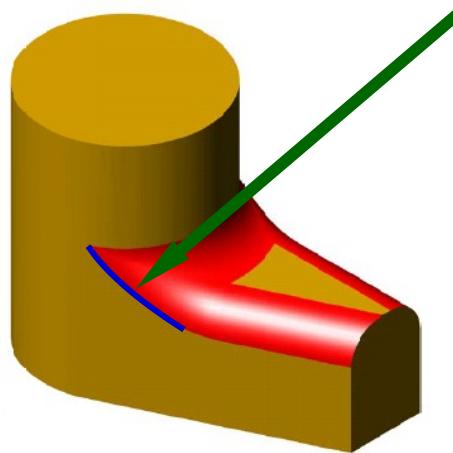
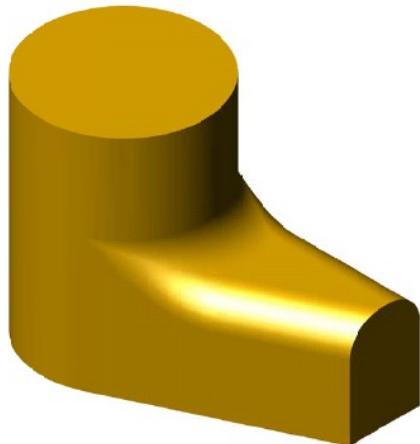
A視圖(5:1)

CAD圖塊法
AVI

圓角畫法詳細步驟 -1/8

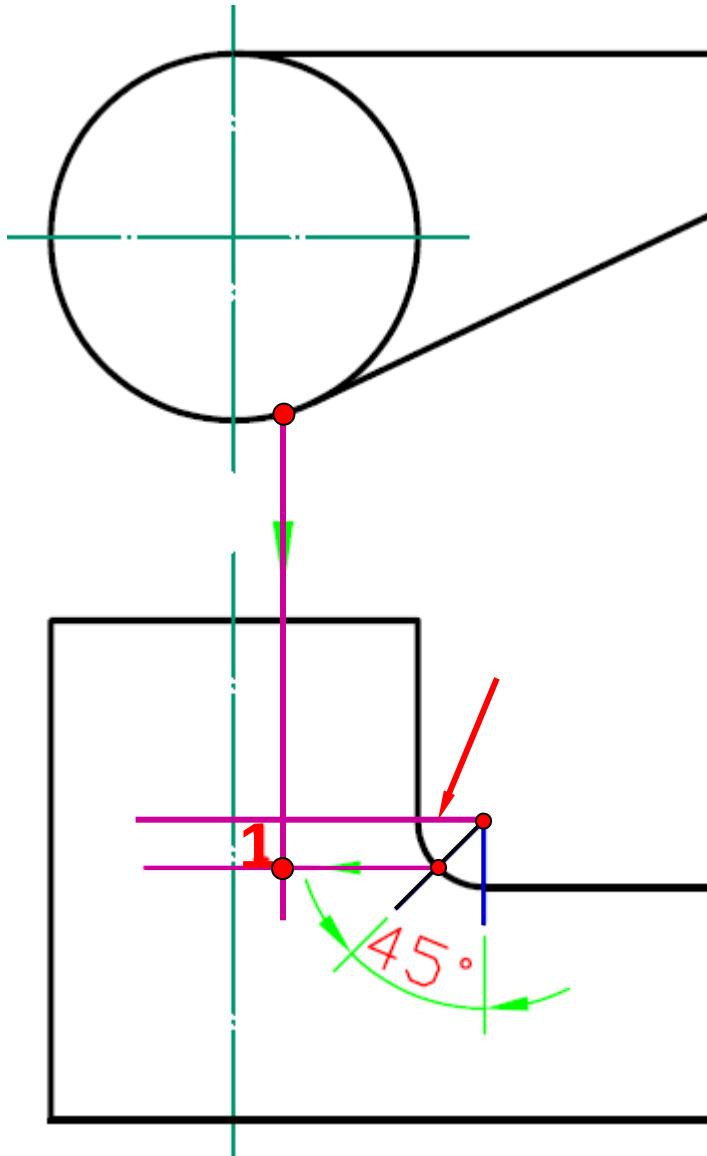
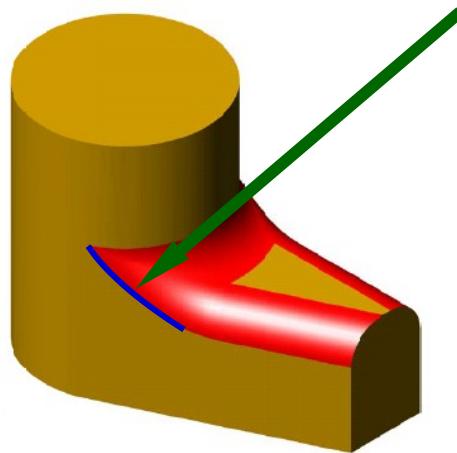
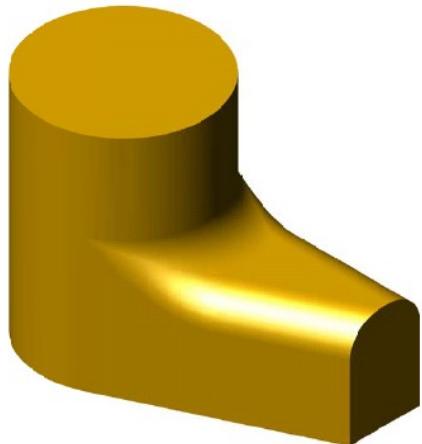


圓角畫法詳細步驟 -2/8

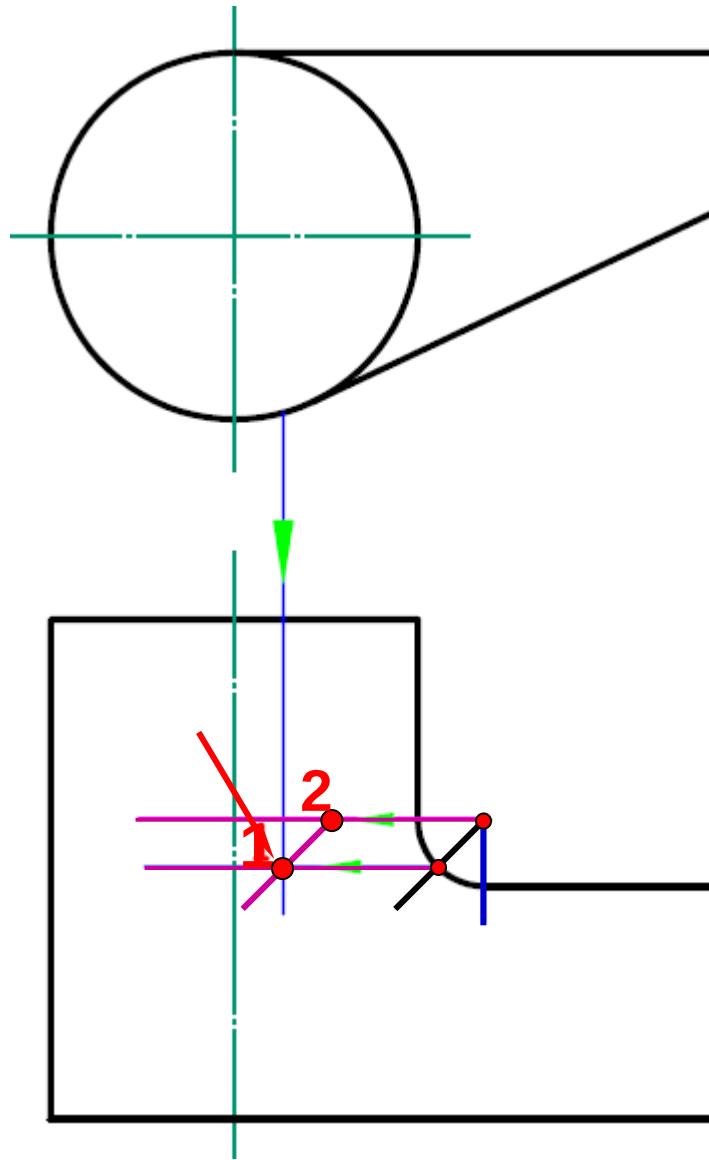
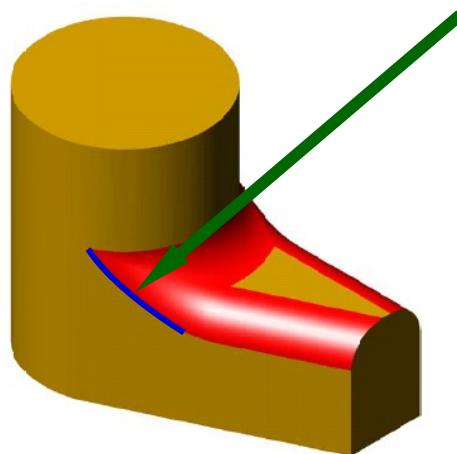
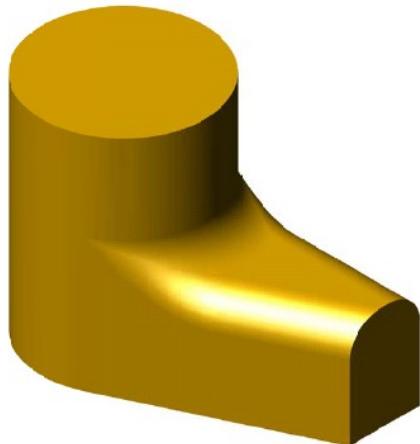


CAD圖

圓角畫法詳細步驟 -3/8

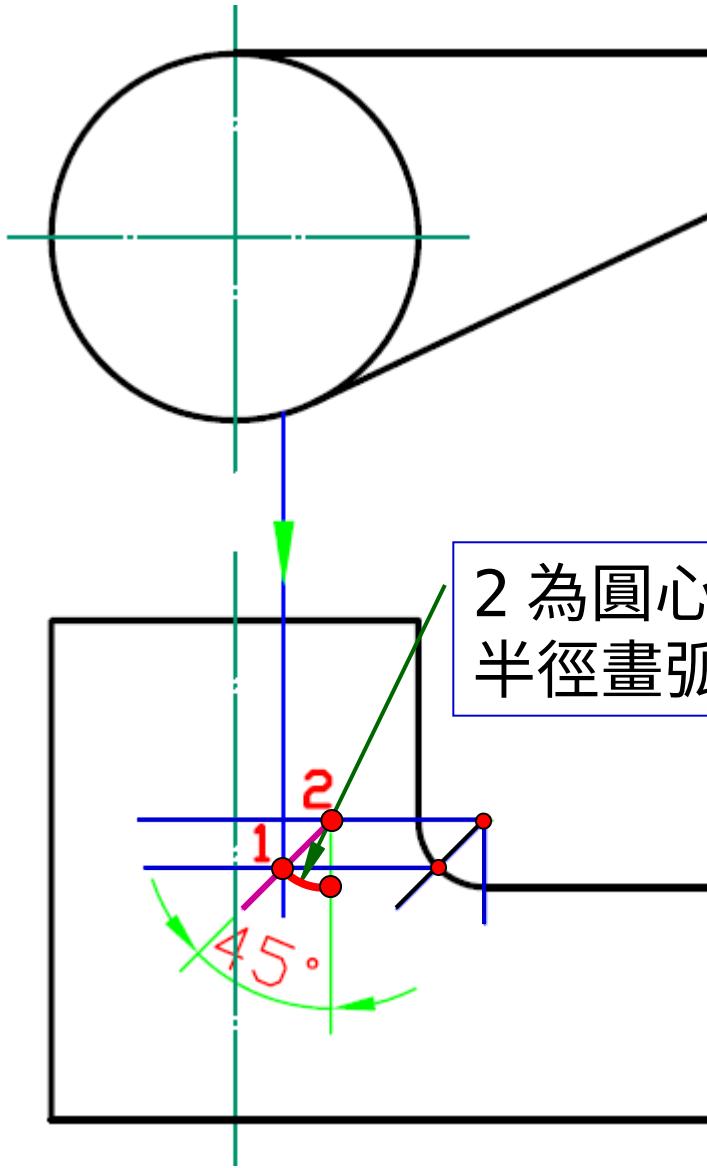
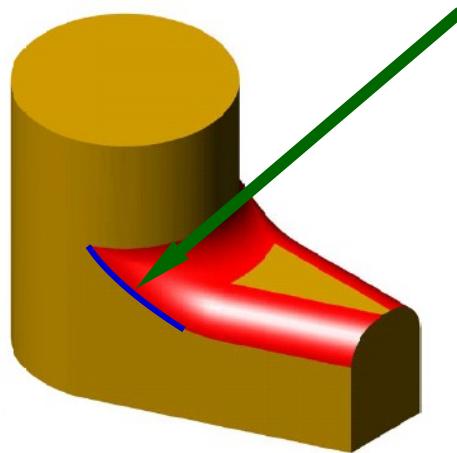
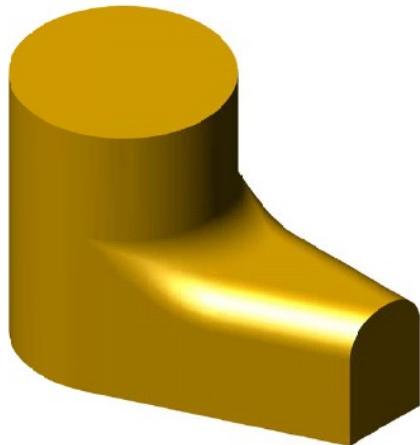


圓角畫法詳細步驟 -4/8

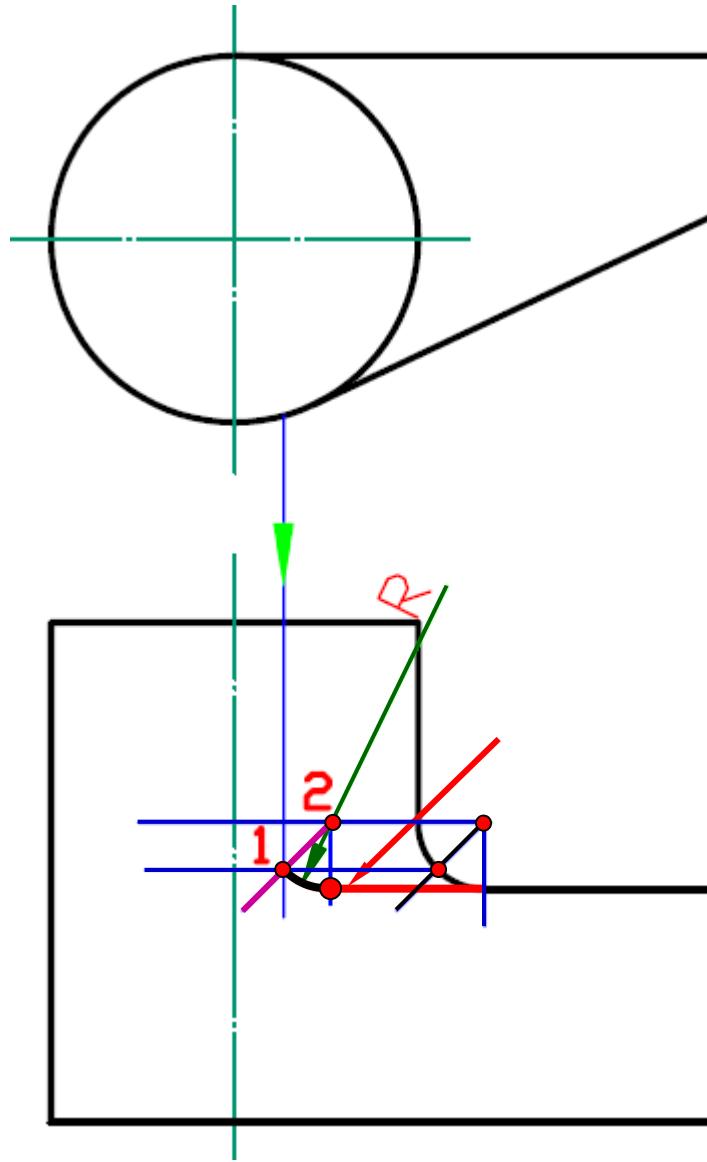
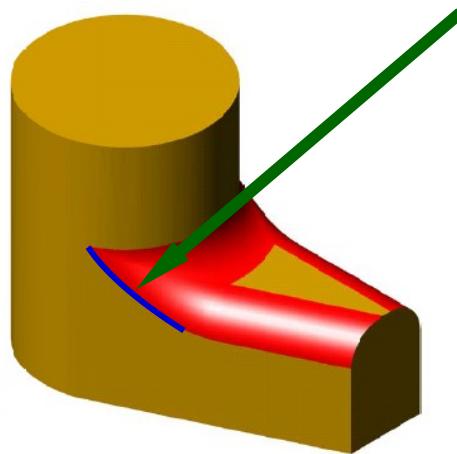
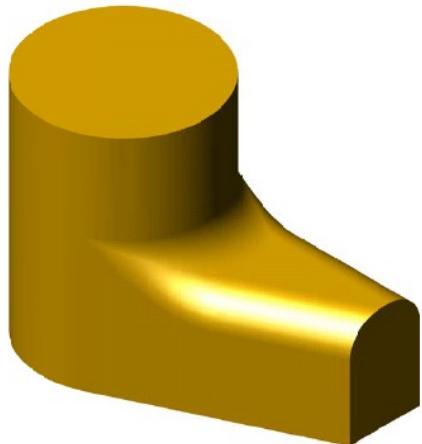


CAD圖

圓角畫法詳細步驟 -5/8

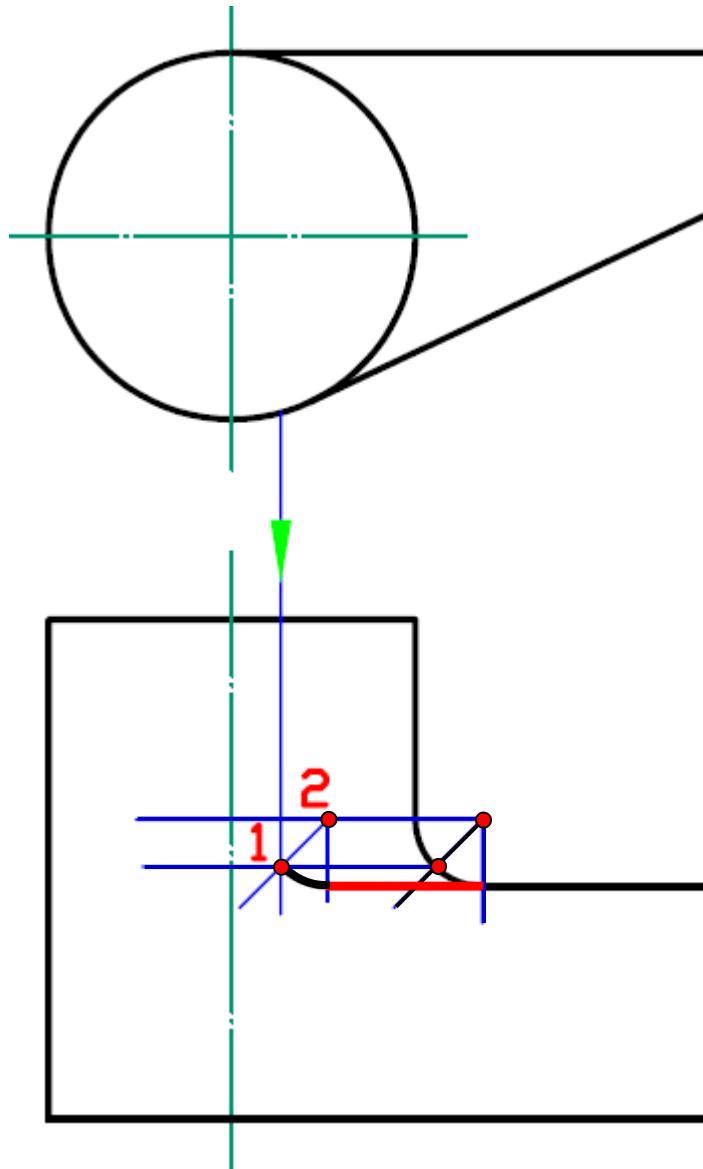
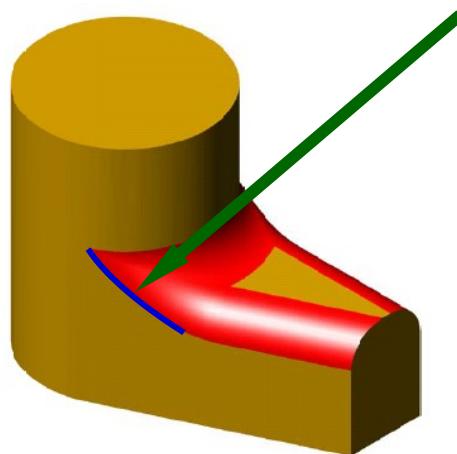
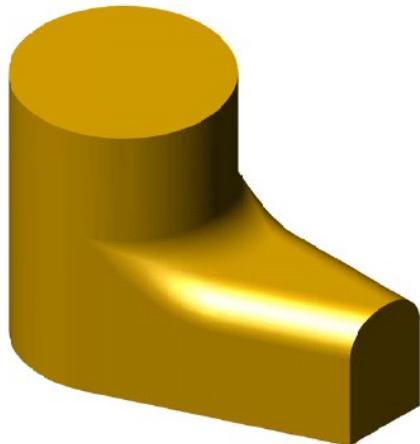


圓角畫法詳細步驟 -6/8



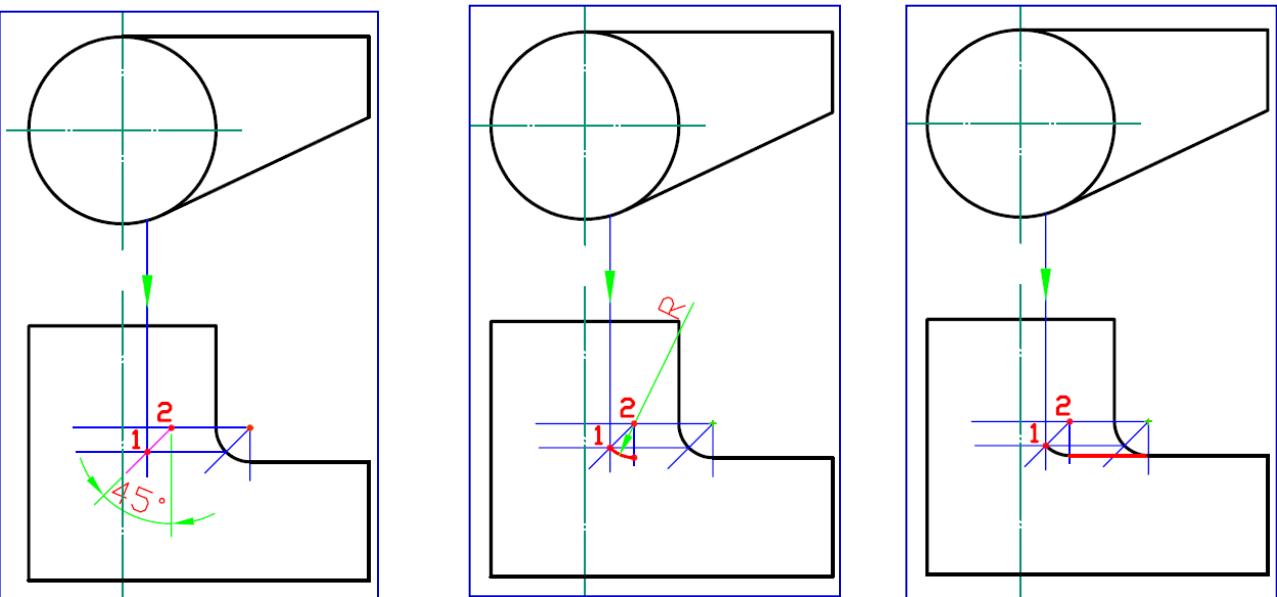
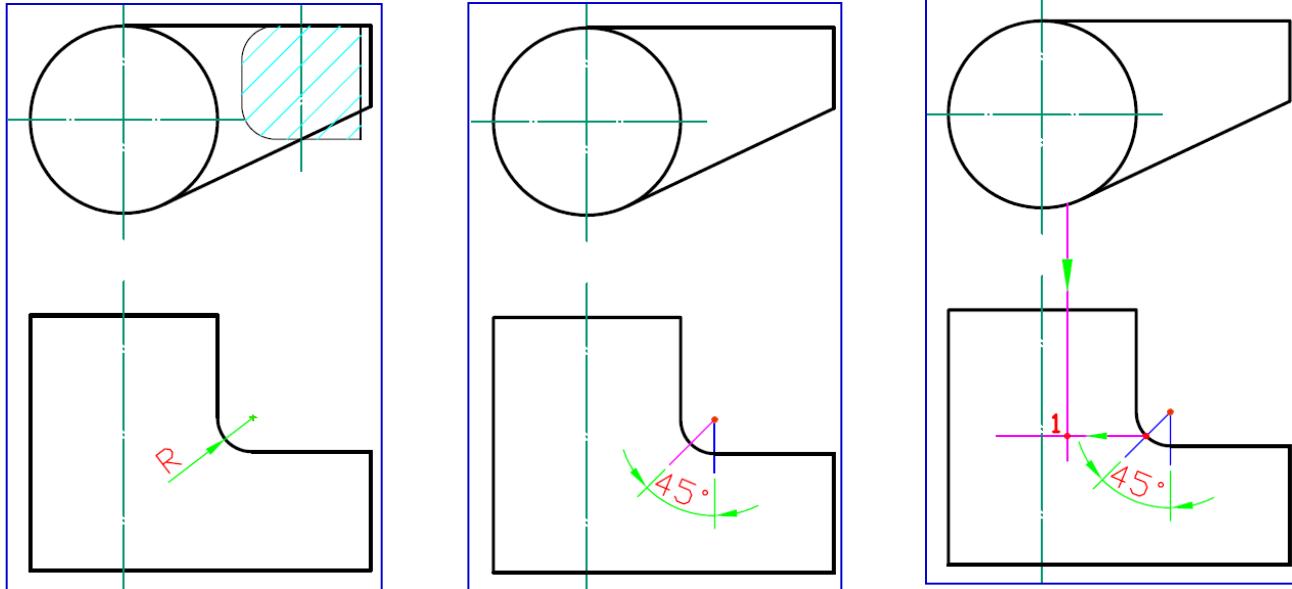
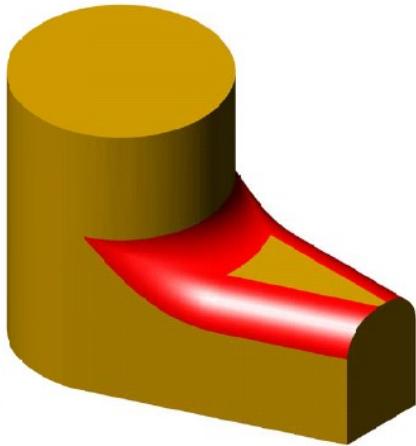
CAD圖

圓角畫法詳細步驟 -7/8

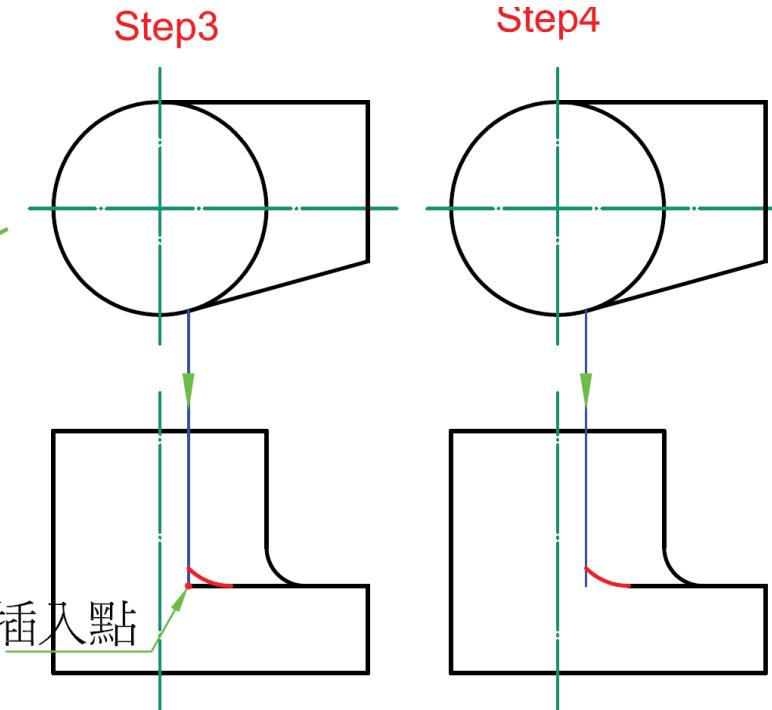
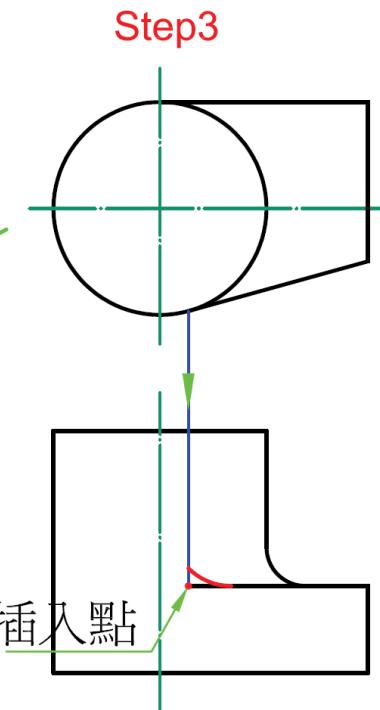
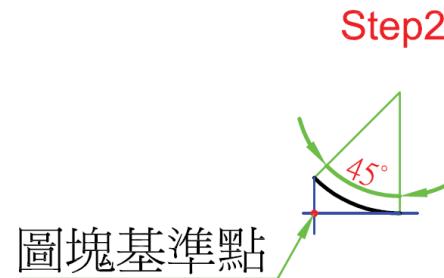
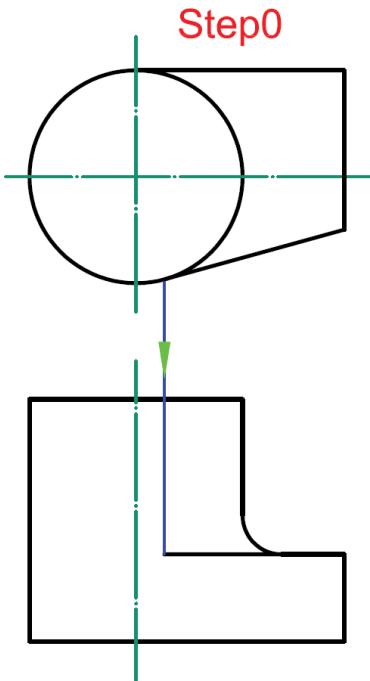


CAD圖

圓角畫法詳細步驟 -8/8



圓角畫法 ---CAD 圖塊法

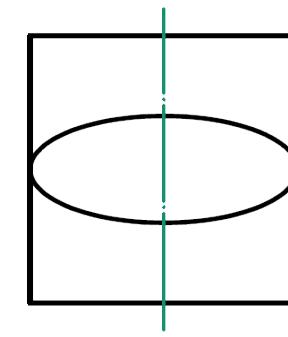
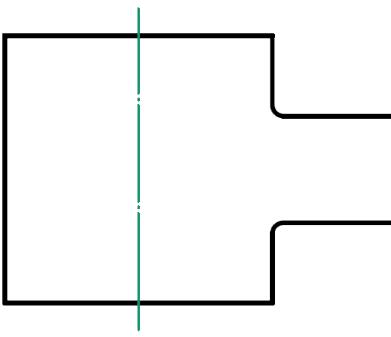
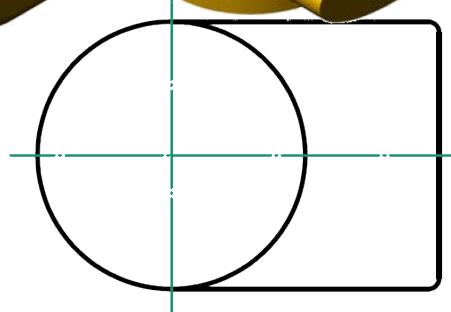
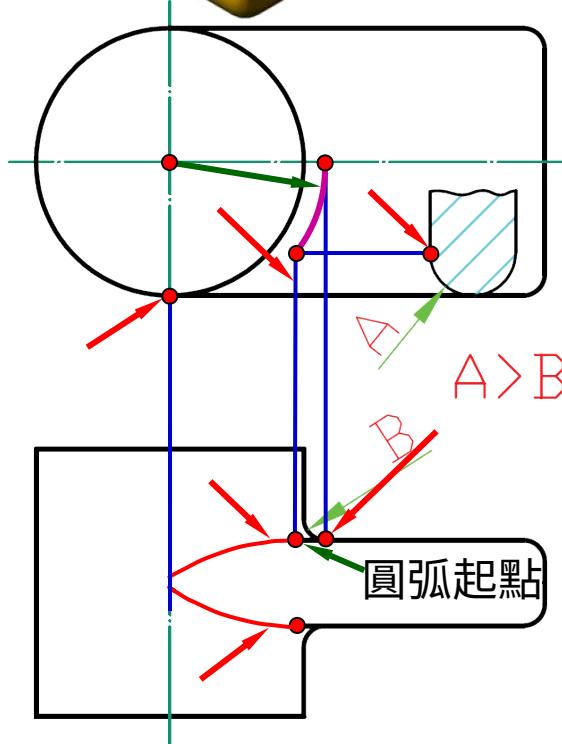
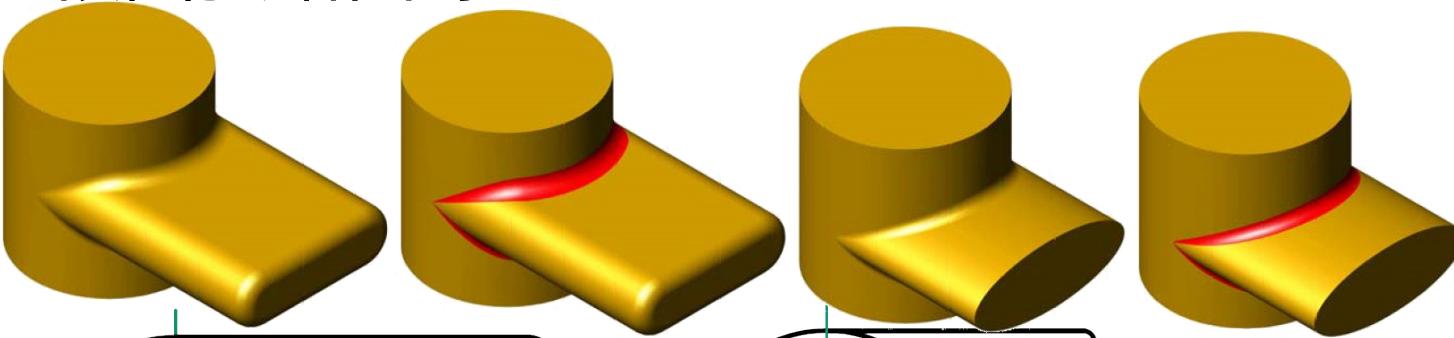


插入比例為
圓角半徑值

CAD圖

圓角畫法 -1/2

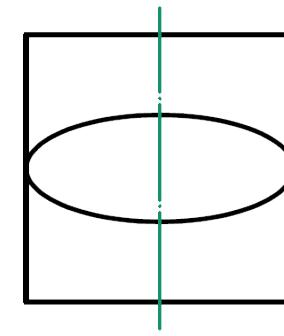
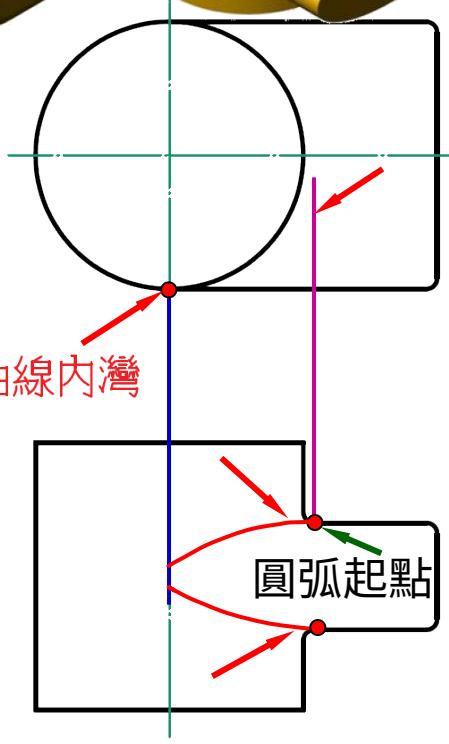
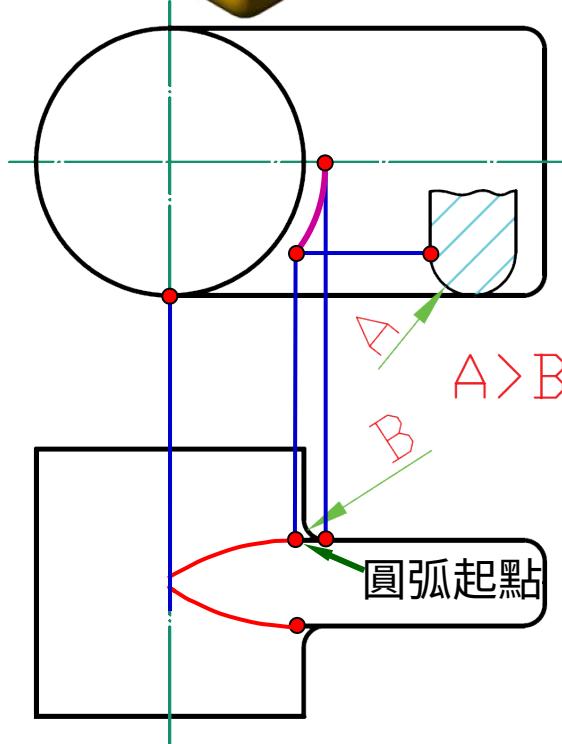
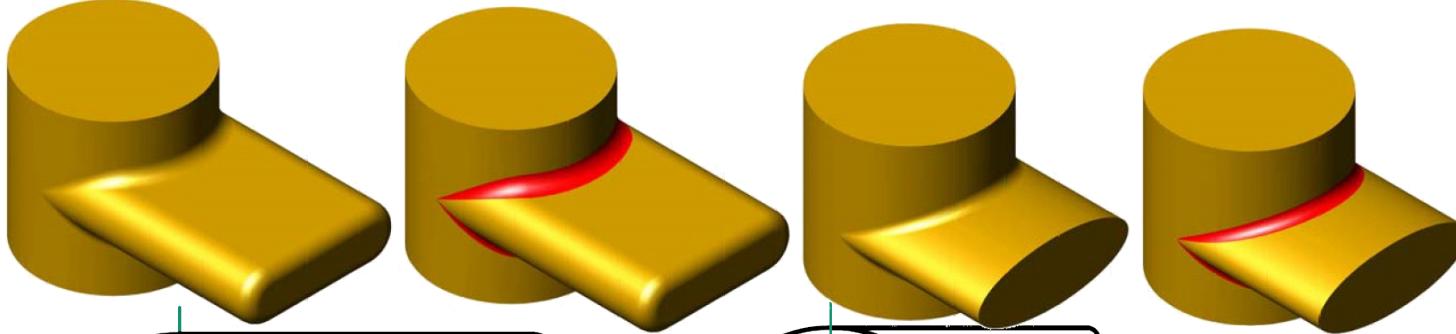
■ 以近似圓弧繪曲線



CAD圖

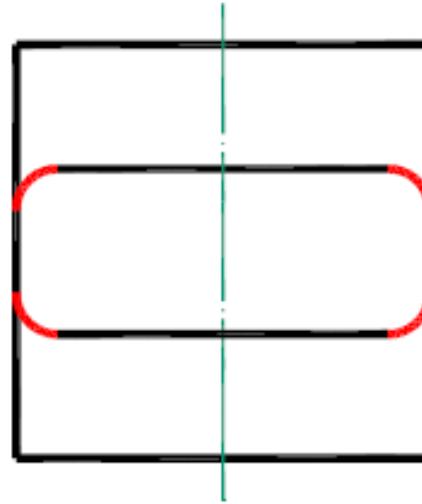
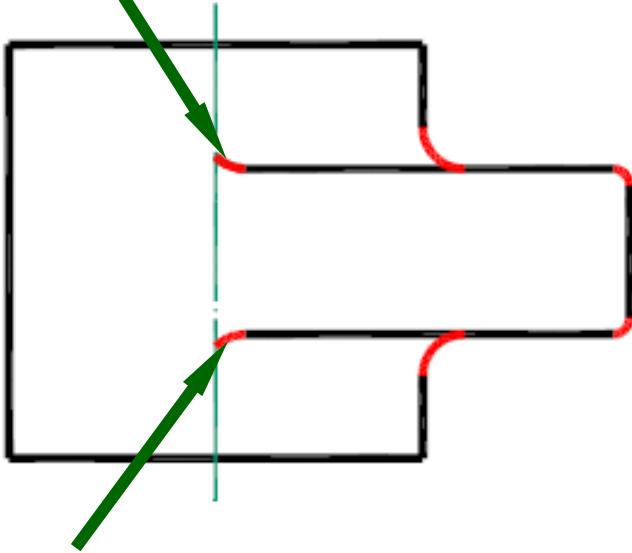
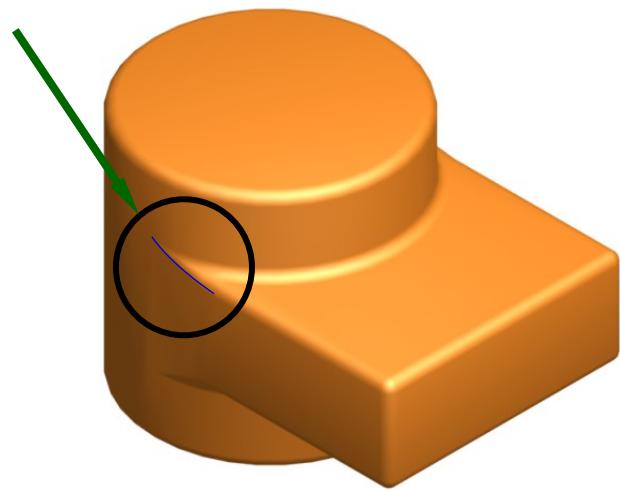
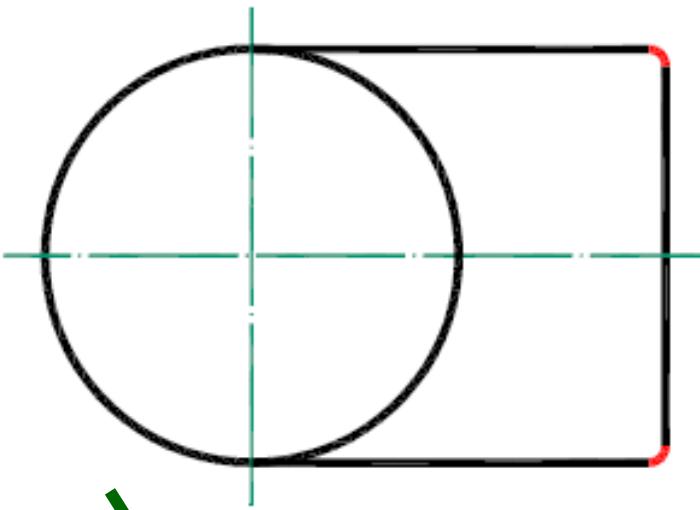
圓角畫法 -2/2

- 同法定圓弧起點，以近似圓弧繪曲線



CAD圖

A<B 曲線外彎

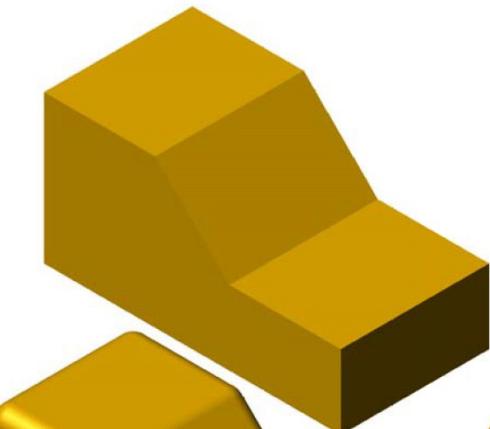


13.14.1 因圓角而消失之稜線

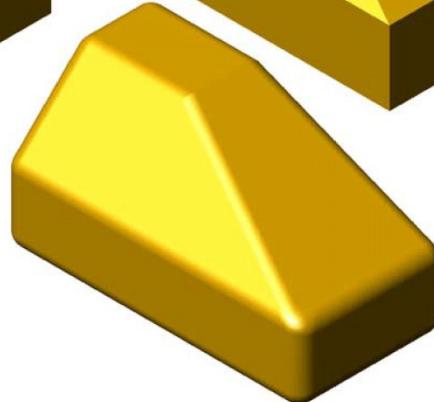
- 一機件上原來有稜角線，若該處製成圓角，其原來之稜線將變得不明顯，不明顯之稜線仍須在原位置上以細實線繪出。
- 若不明顯之稜線非圓時，細實線之兩端與其他線條間須留約 1~2mm 空隙，如下圖所示。

13.14.1 因圓角而消失之稜線 -1/6

無圓角 →

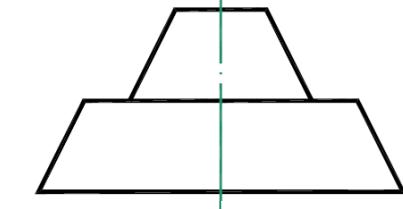
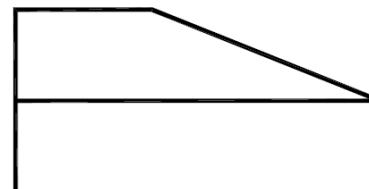
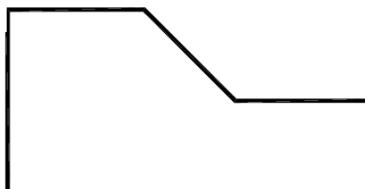
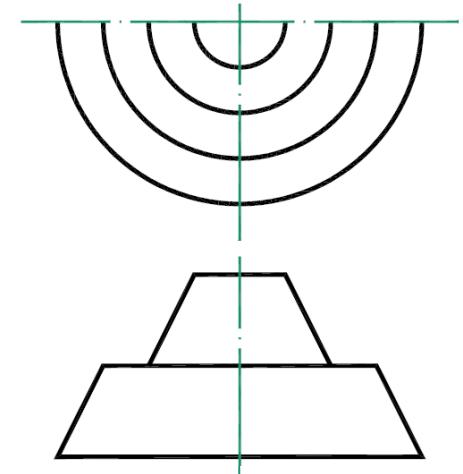
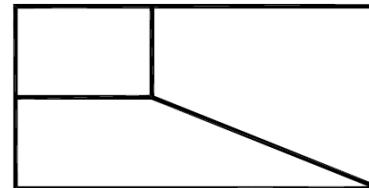


有圓角 →

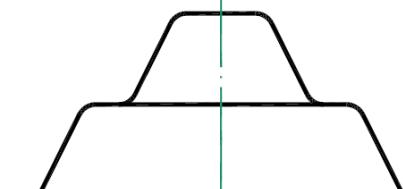
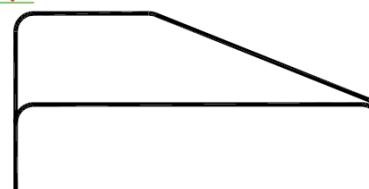
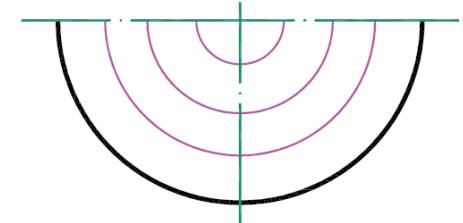
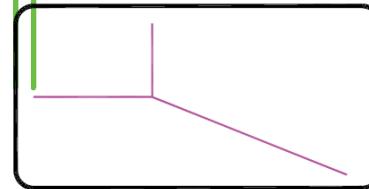
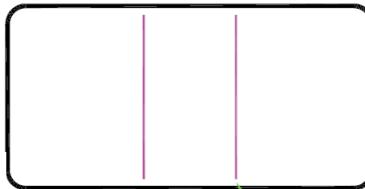


13.14.1 因圓角而消失之稜線 -2/6

無圓角

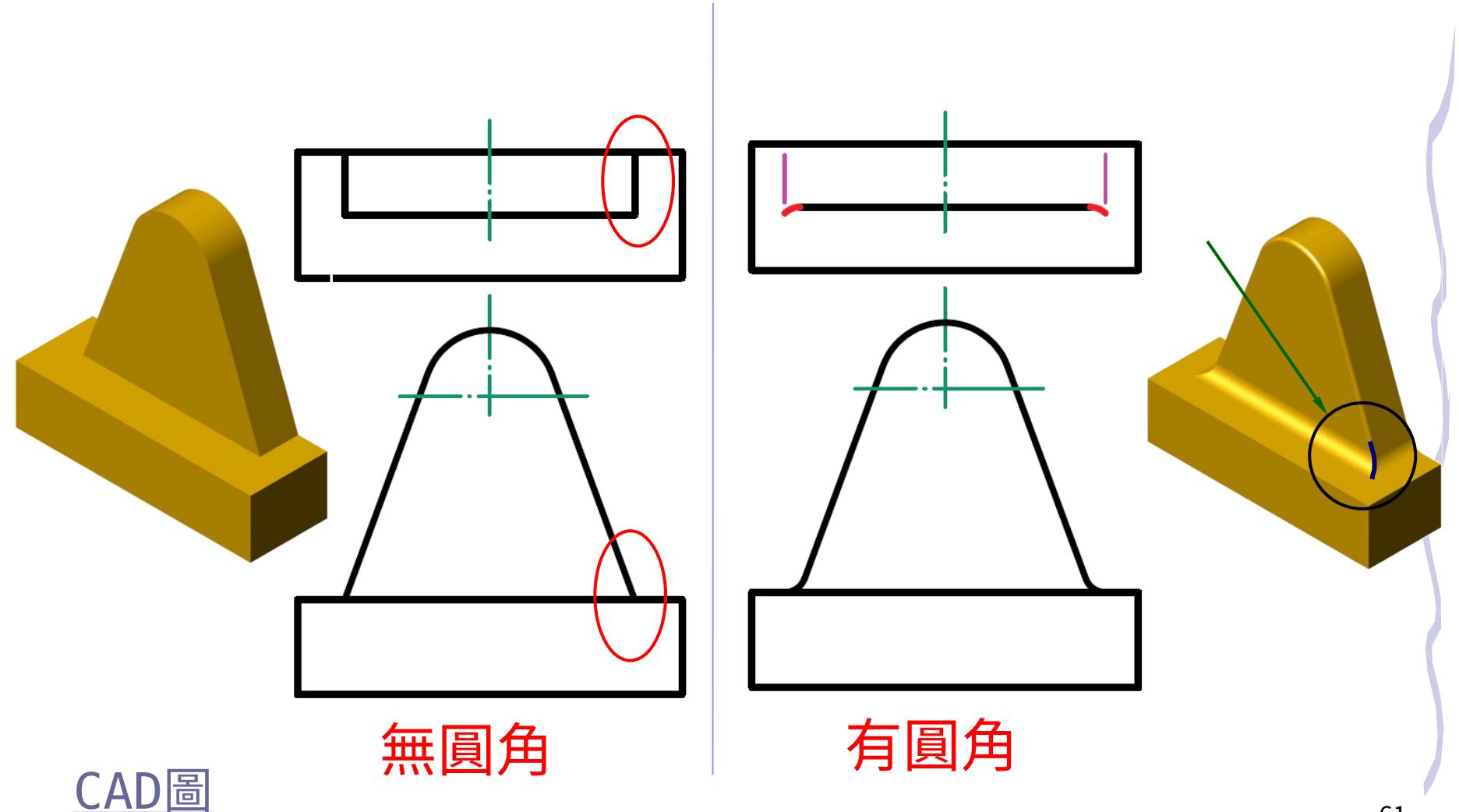


有圓角

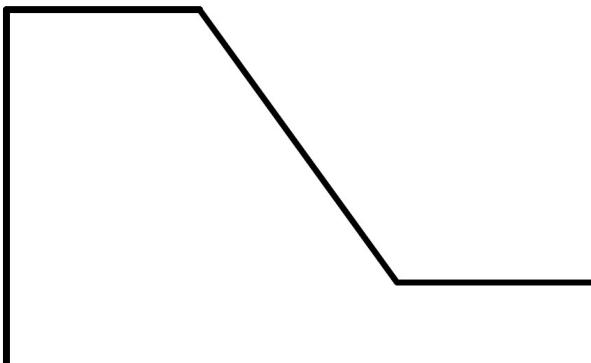
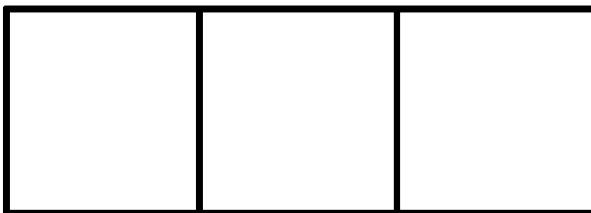


CAD圖

因圓角而消失之稜線 -3/6

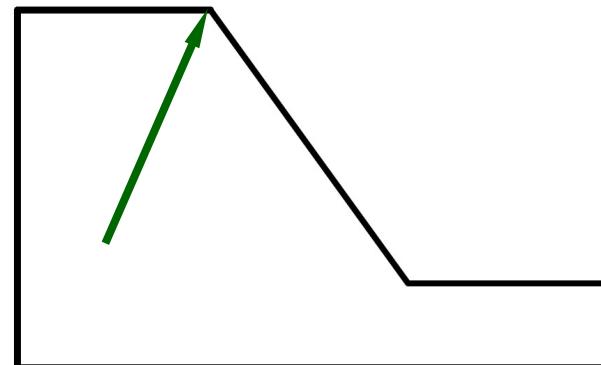
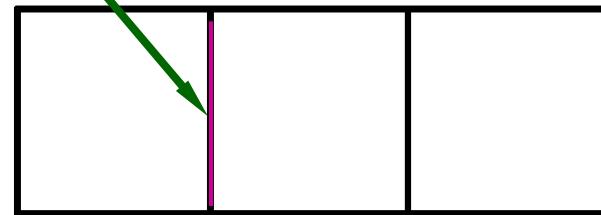
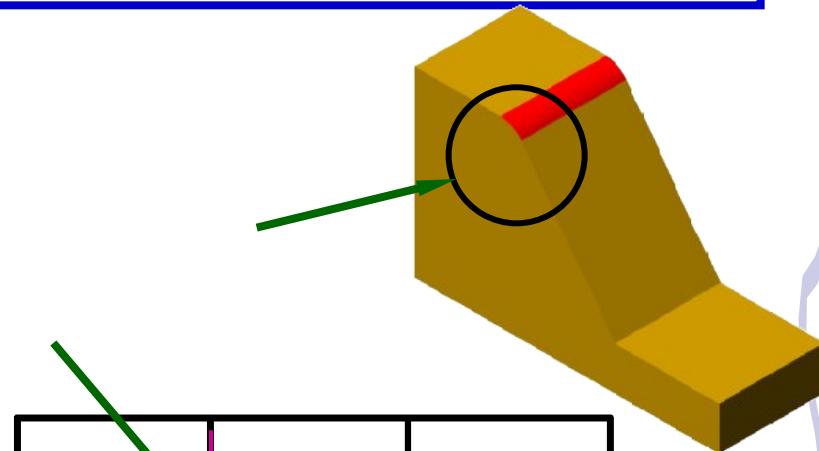


因圓角而消失之稜線 -4/6

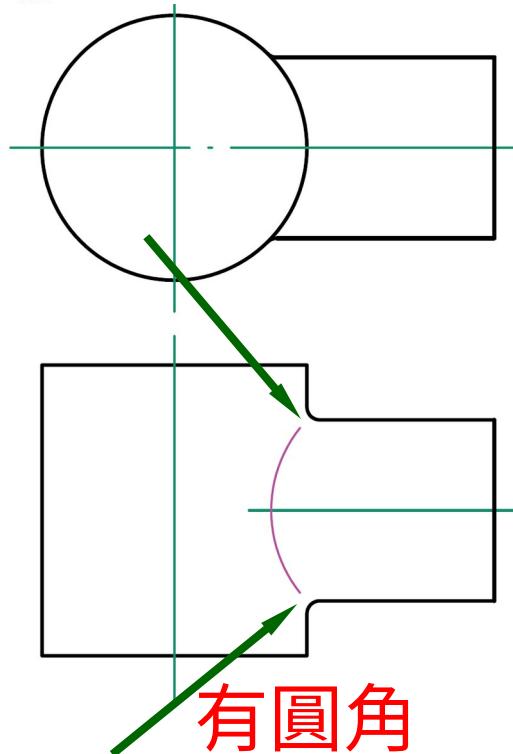
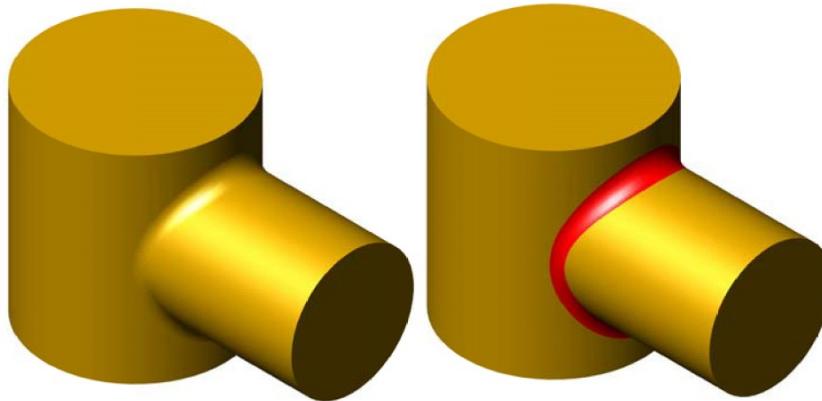


CAD圖

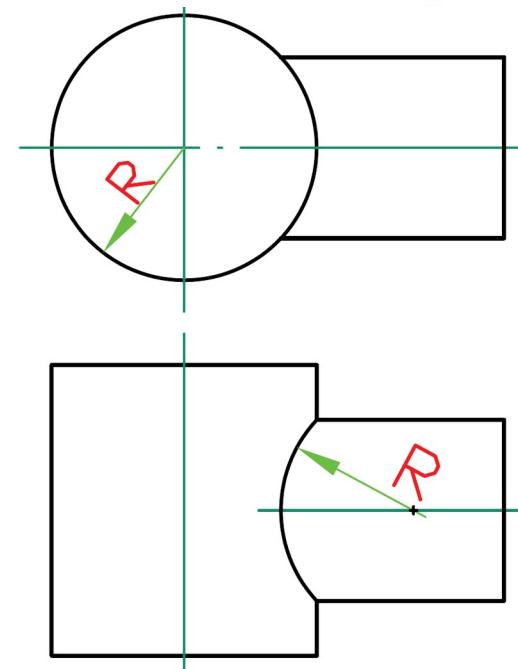
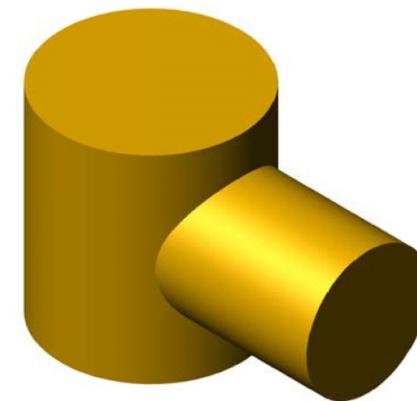
無圓角



因圓角而消失之稜線 -5/6

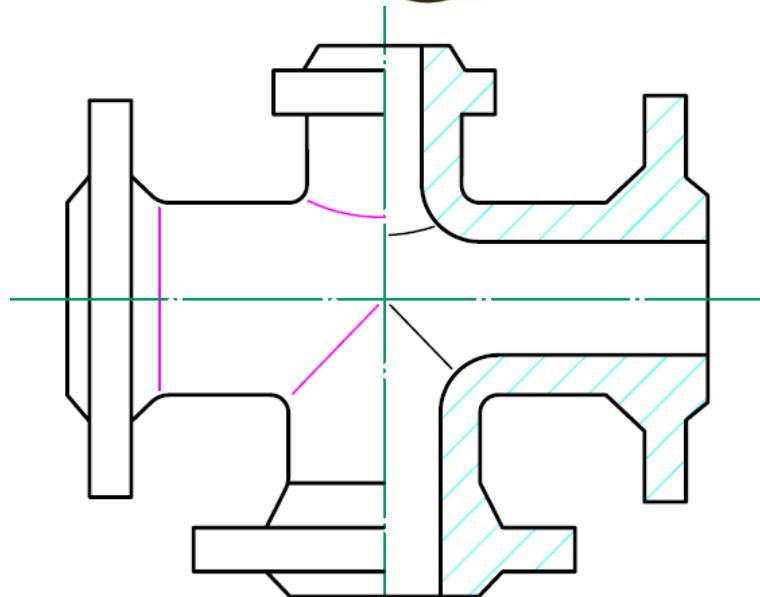
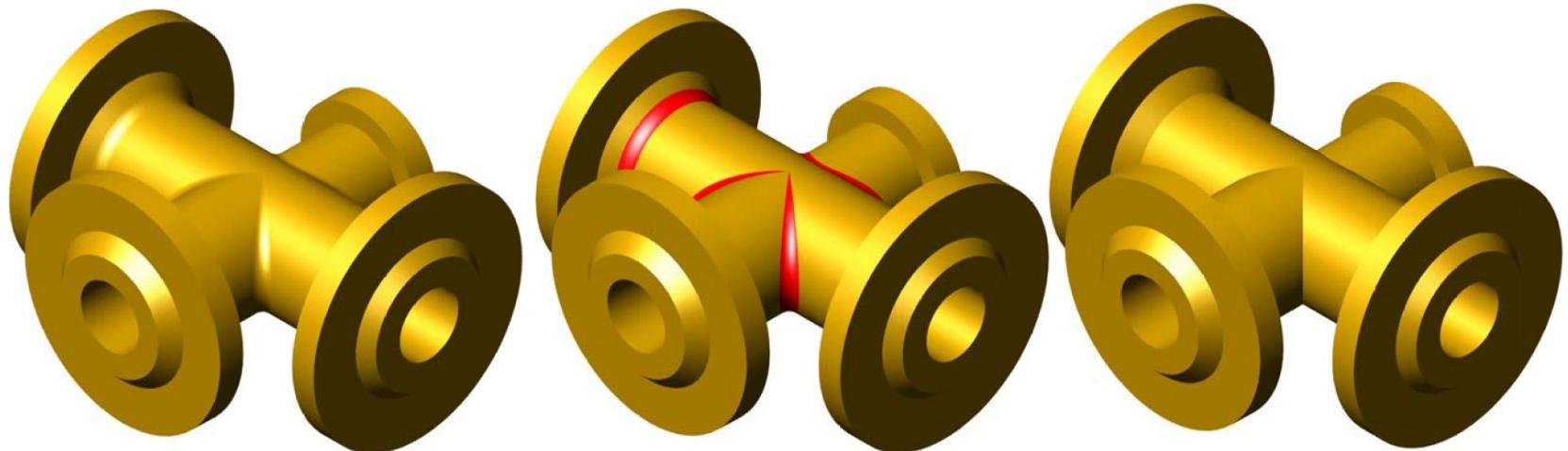


CAD圖

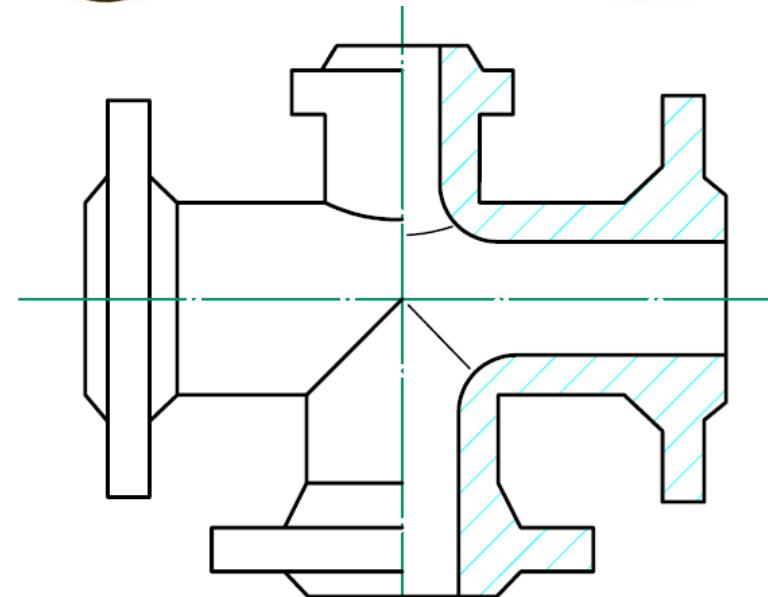


無圓角

因圓角而消失之稜線 -6/6

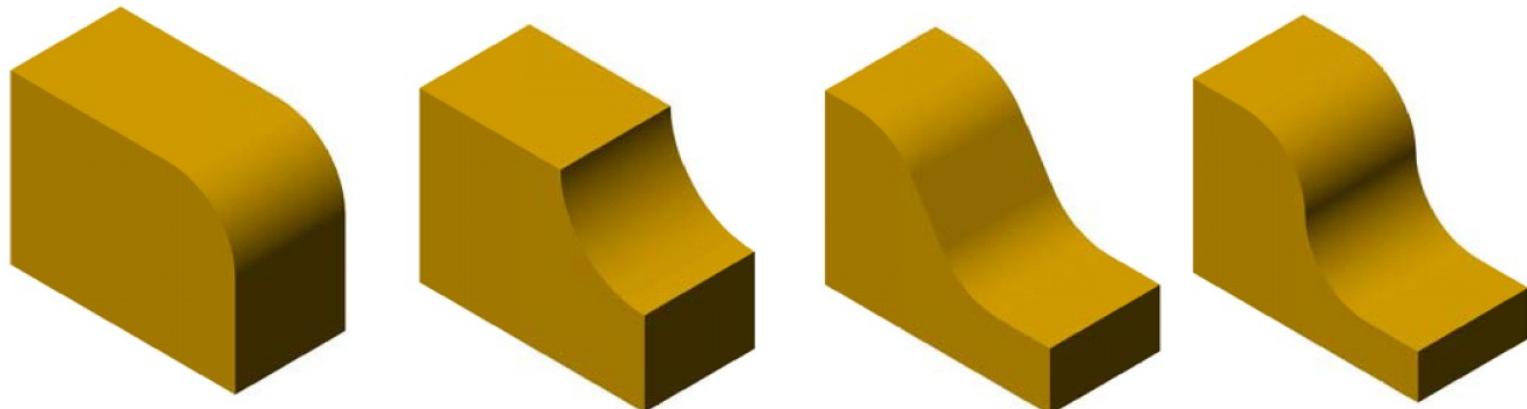


CAD圖 有圓角

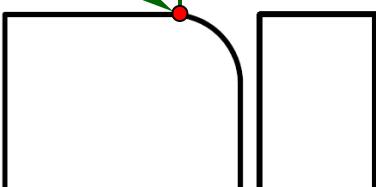


無圓角

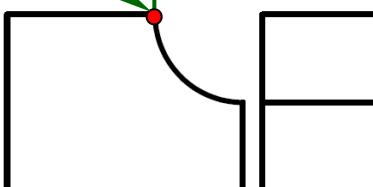
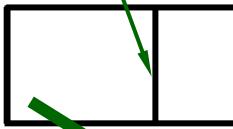
面與曲面交線畫法 -1/2



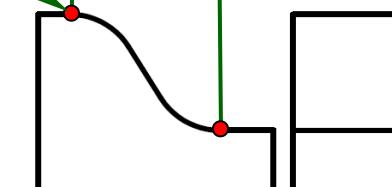
相切無交線



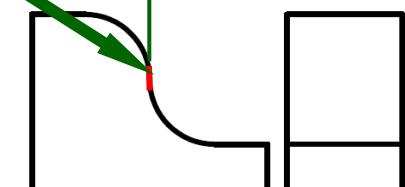
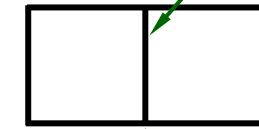
面的交線



相切無交線

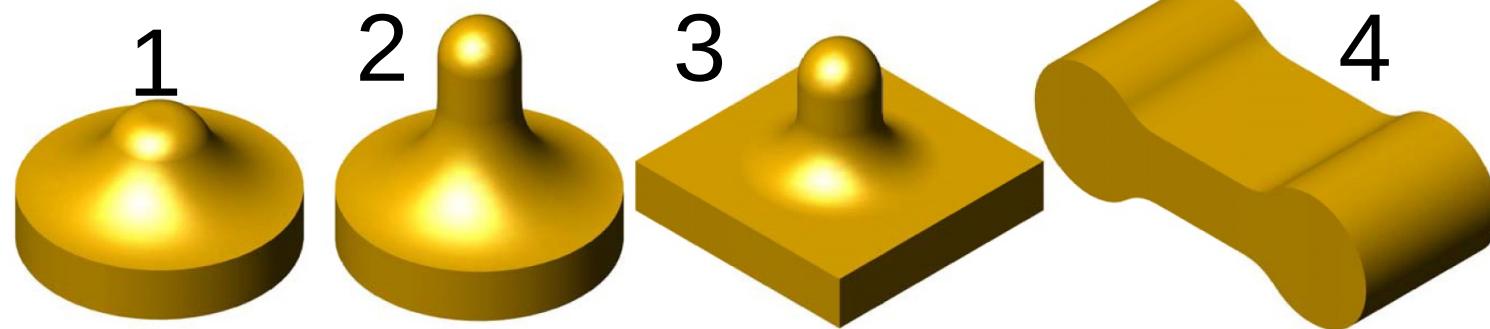


面的邊視圖

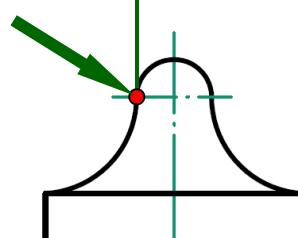
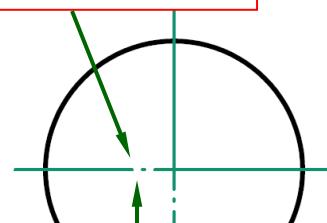


CAD圖

圓柱曲面交線畫法 -2/2

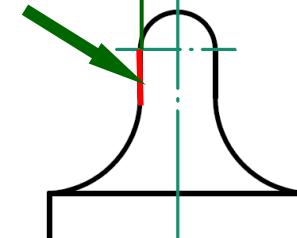
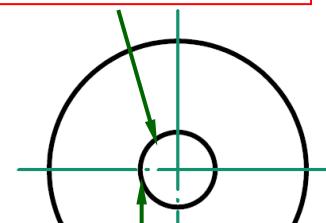


相切無交線



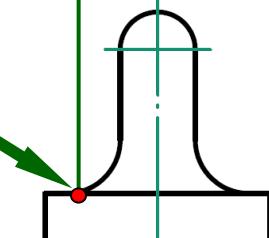
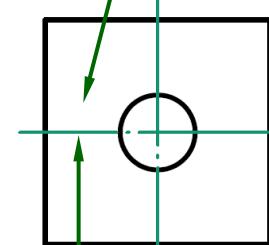
1

面的邊視圖



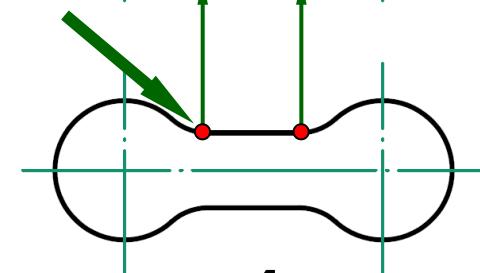
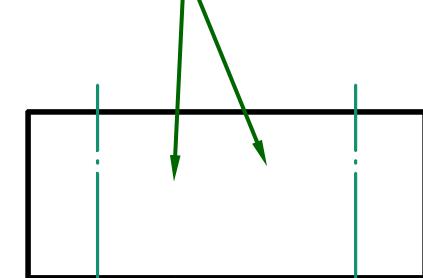
2

相切無交線



3

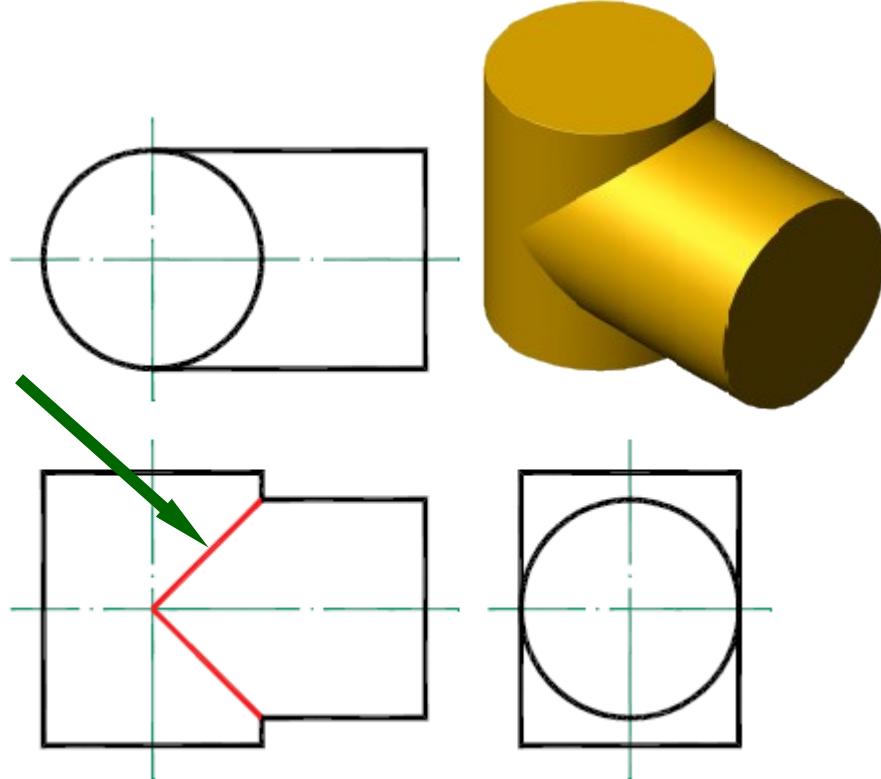
相切無交線



4

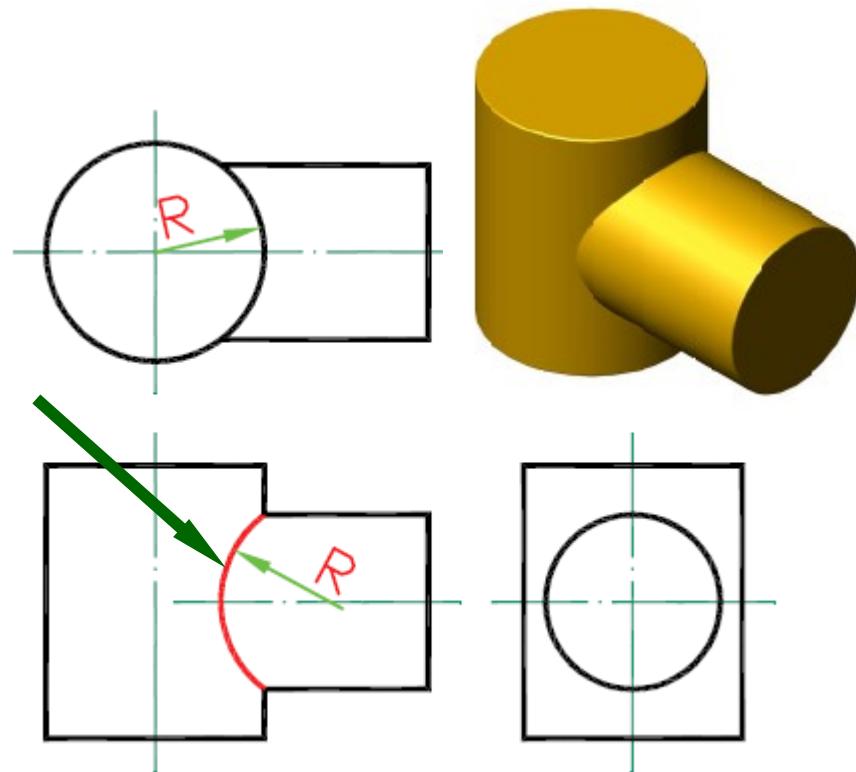
CAD圖

13.14.2 交線習用畫法 (無圓角)



兩圓柱半徑相等

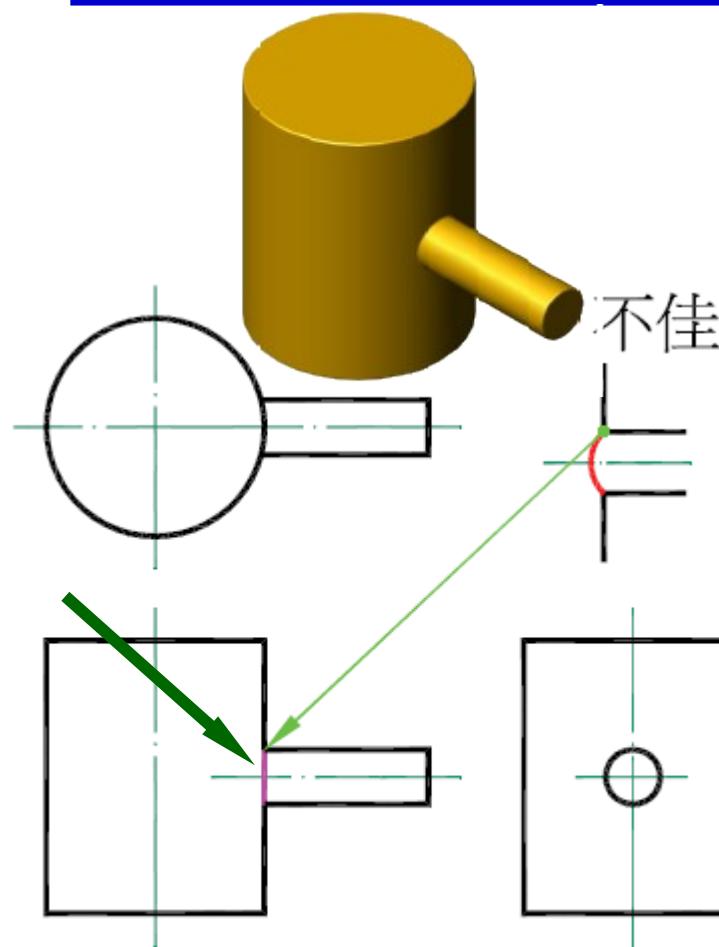
CAD圖



兩圓柱半徑差異不大

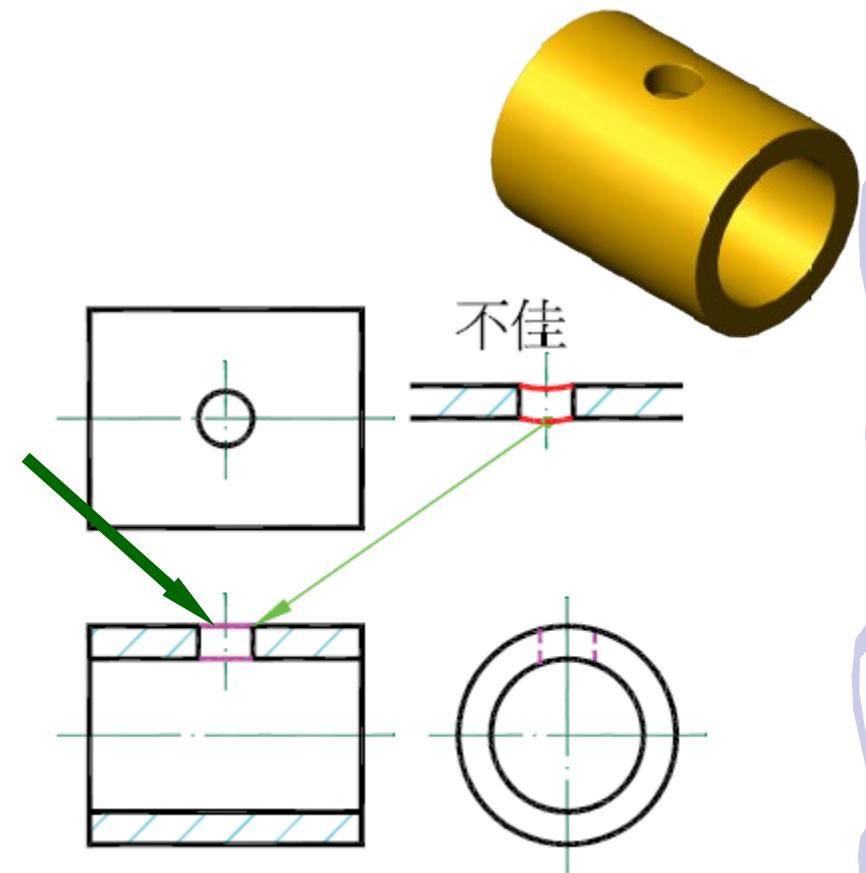
CAD圖

圖 13.56 兩圓柱相交之交線習用畫法 1/2



兩圓柱半徑差異甚大

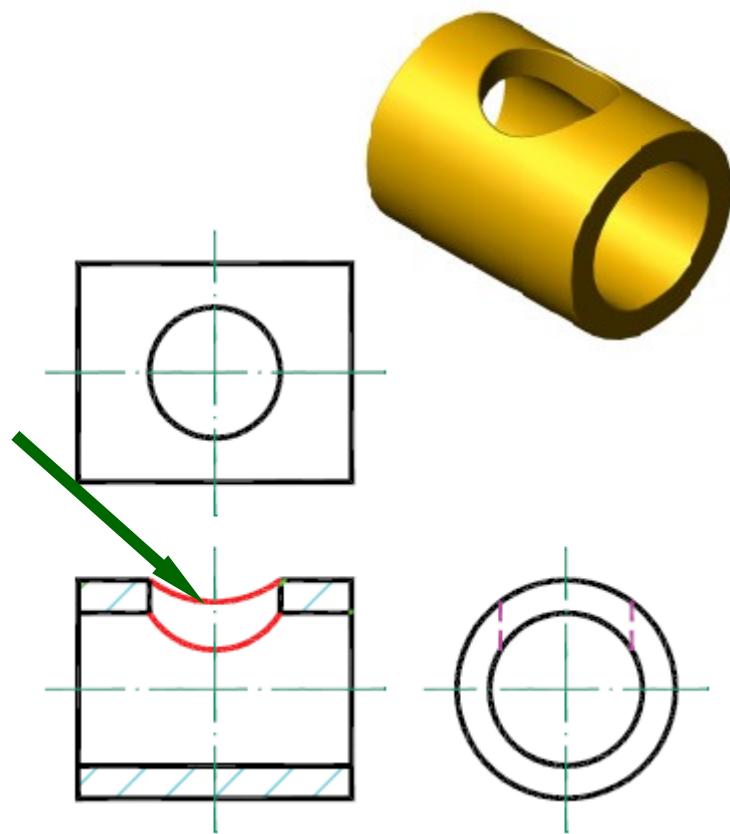
CAD圖



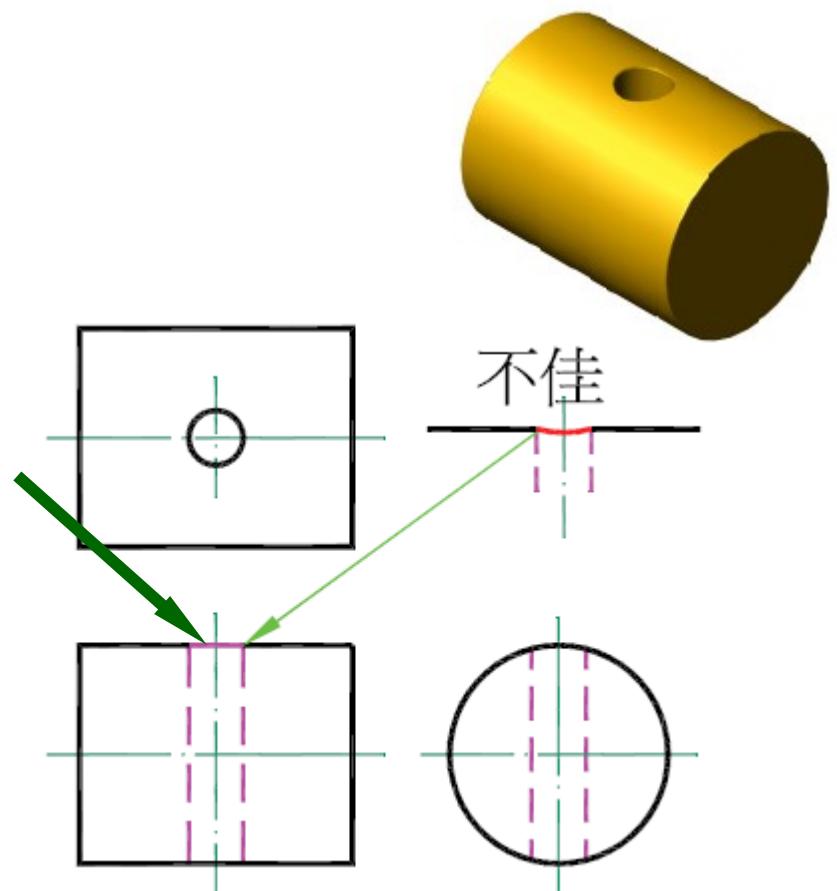
圓孔與套筒柱半徑差異甚大

CAD圖

圖 13.56 兩圓柱相交之交線習用畫法 2/2

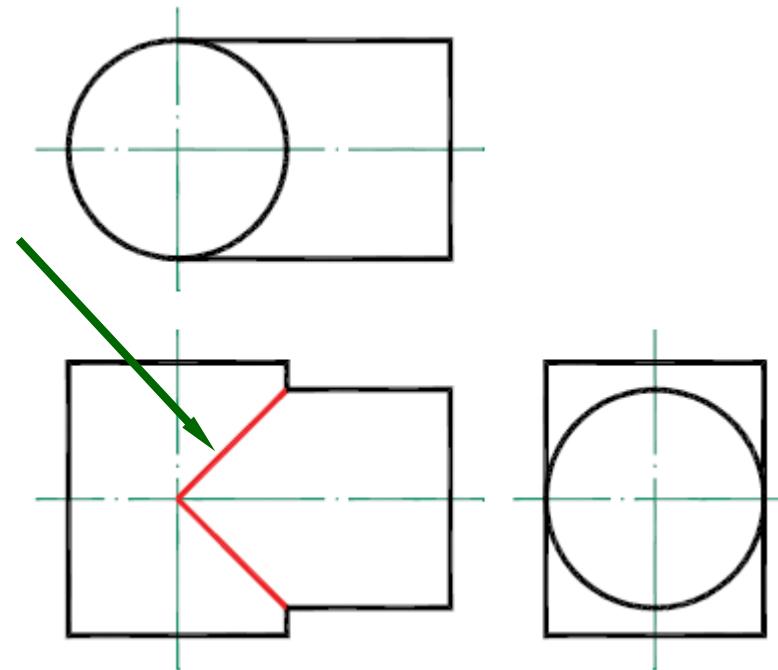


(e) 圓孔與套筒半徑相差不大
CAD圖



(f) 圓孔與圓柱半徑相差甚大
CAD圖

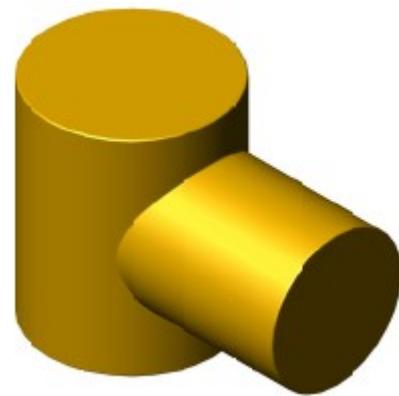
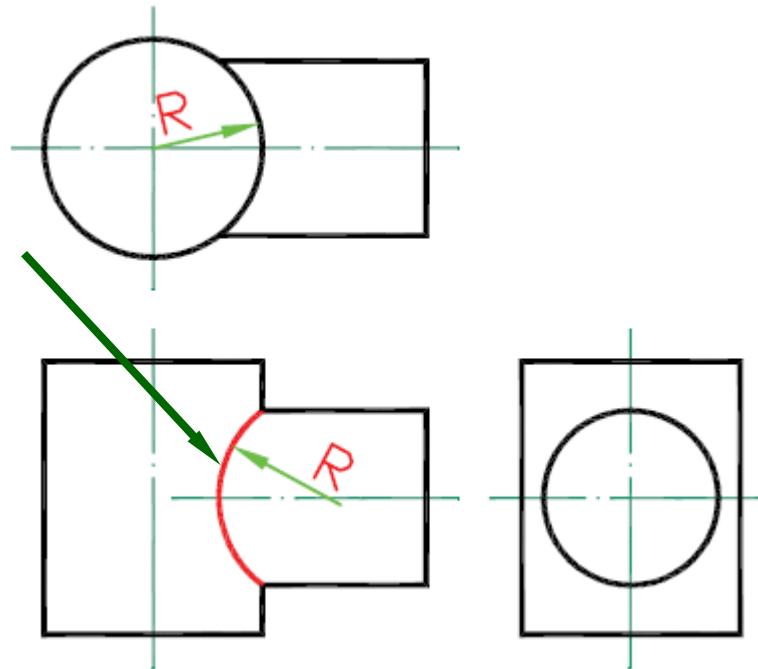
13.14.2 交線習用畫法 -1/6



兩圓柱半徑相等

CAD圖

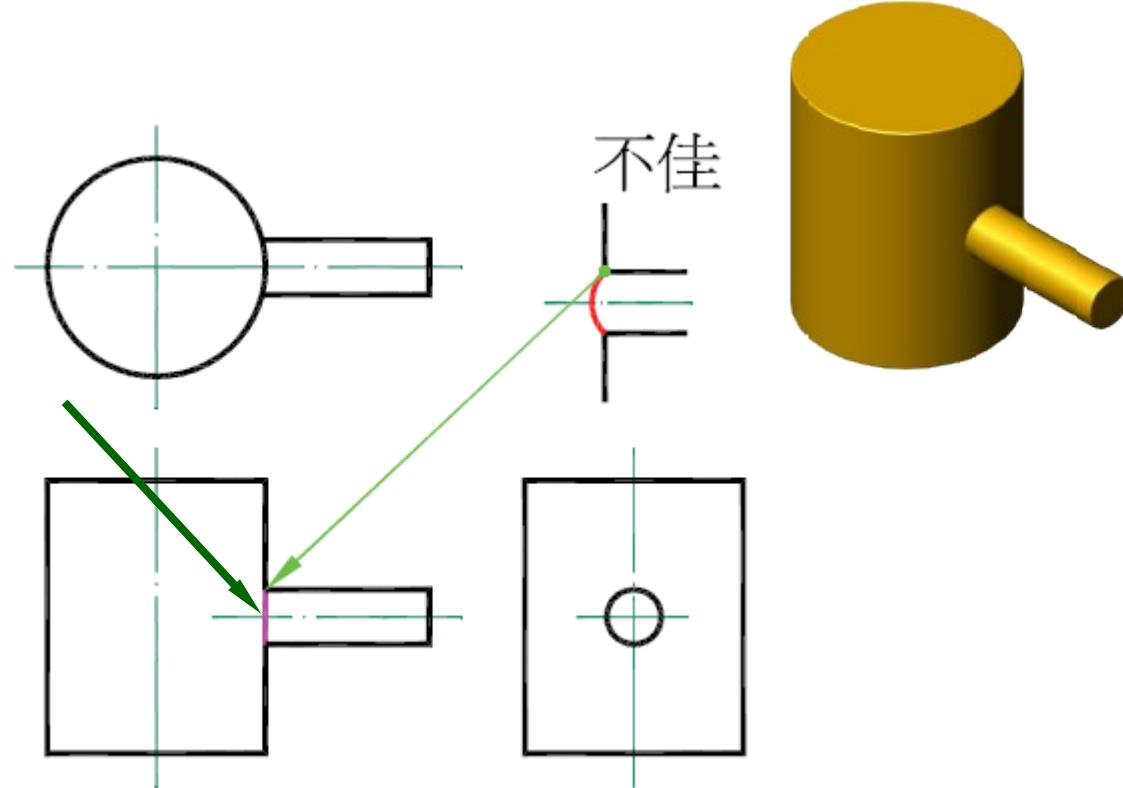
13.14.2 交線習用畫法 -2/6



兩圓柱半徑差異不大

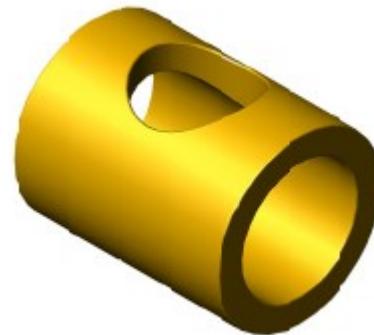
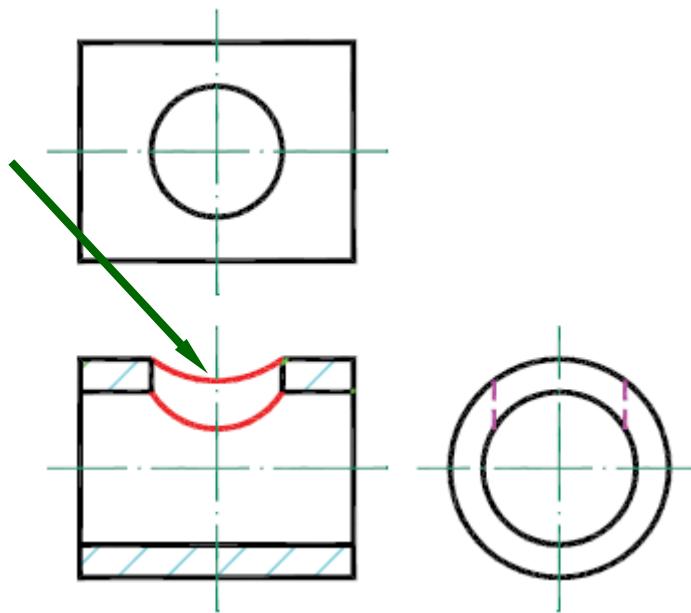
CAD圖

13.14.2 交線習用畫法 -3/6



CAD圖

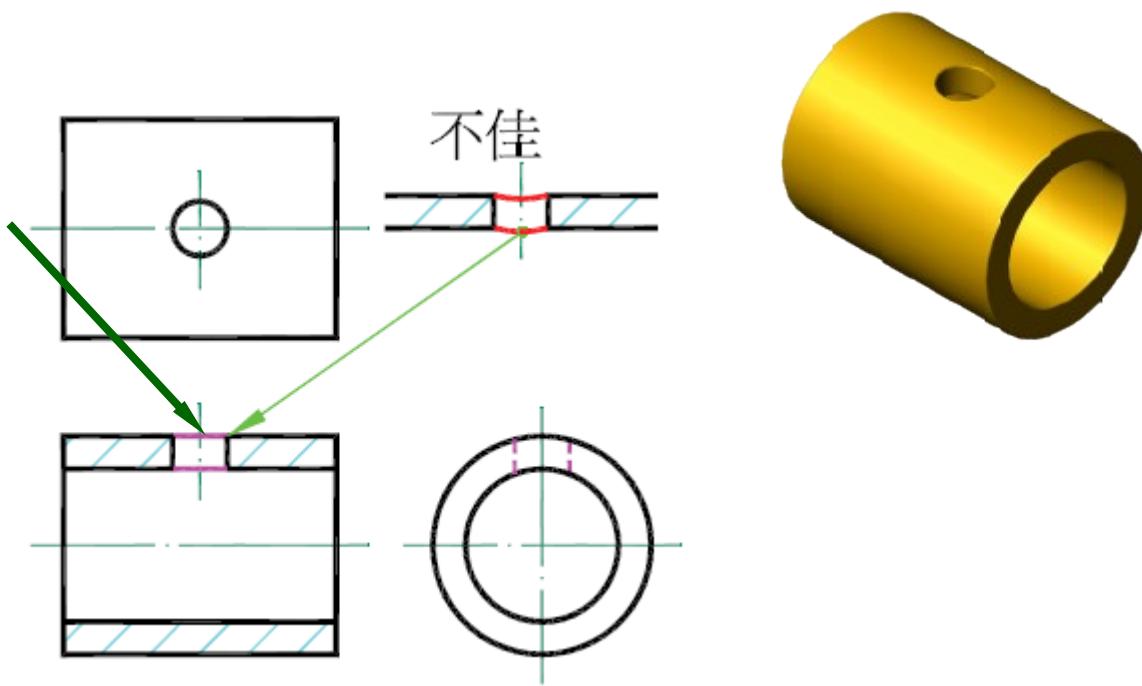
13.14.2 交線習用畫法 -4/6



圓孔與套筒柱半徑差異不大

CAD圖

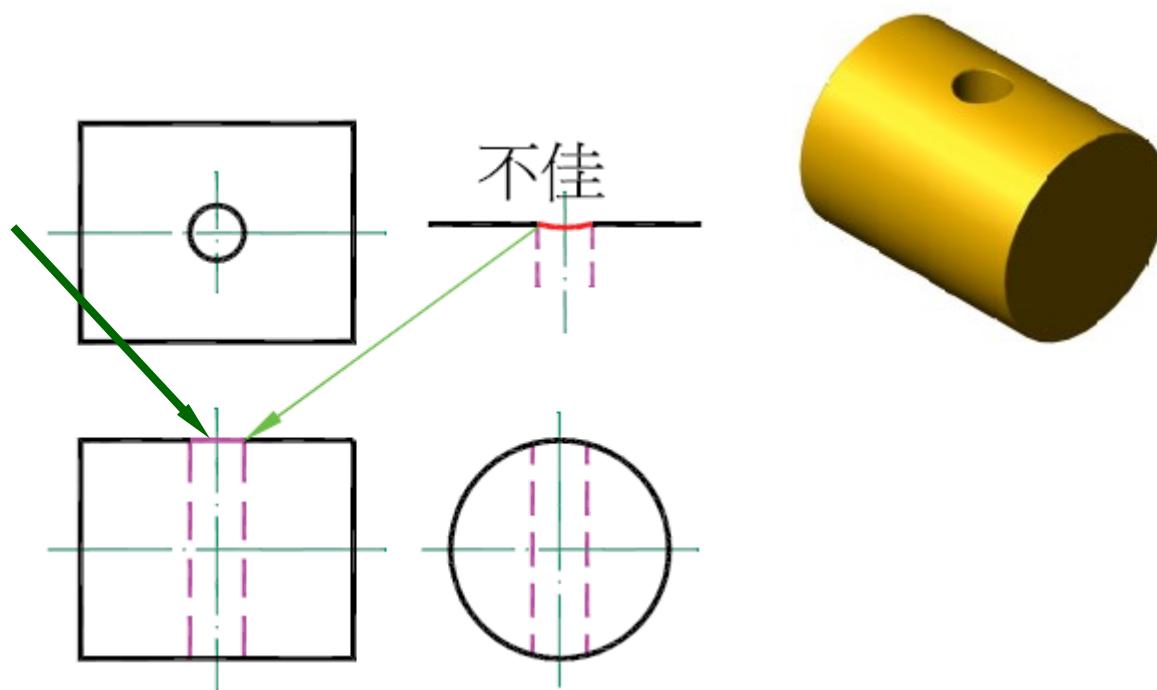
13.14.2 交線習用畫法 -5/6



圓孔與套筒柱半徑差異甚大

CAD圖

13.14.2 交線習用畫法 -6/6

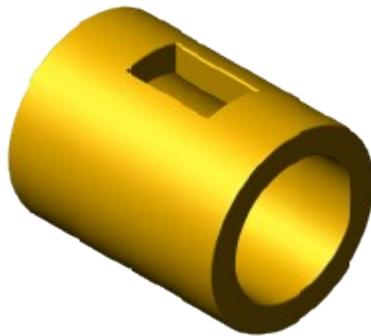


(f) 圓孔與圓柱半徑相差甚
大

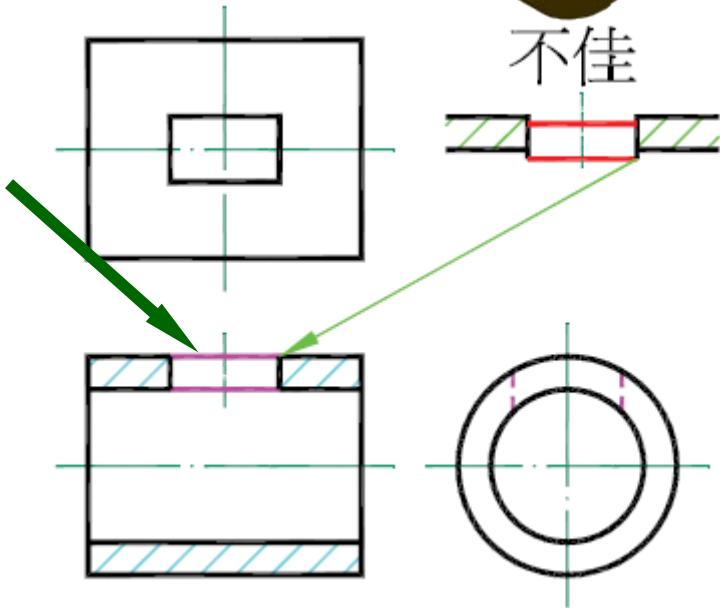
CAD圖

圖 13.57 角柱與圓柱相交之交線習用畫法

1/3

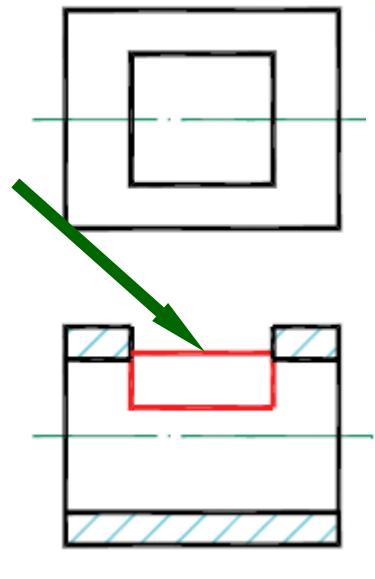
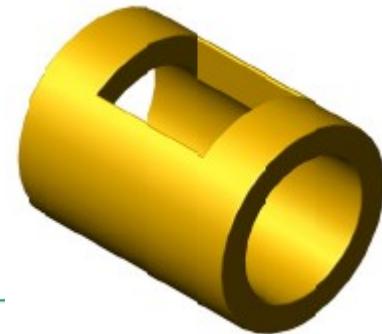


不佳



(a) 方孔邊長與套筒半徑相差甚大

CAD圖

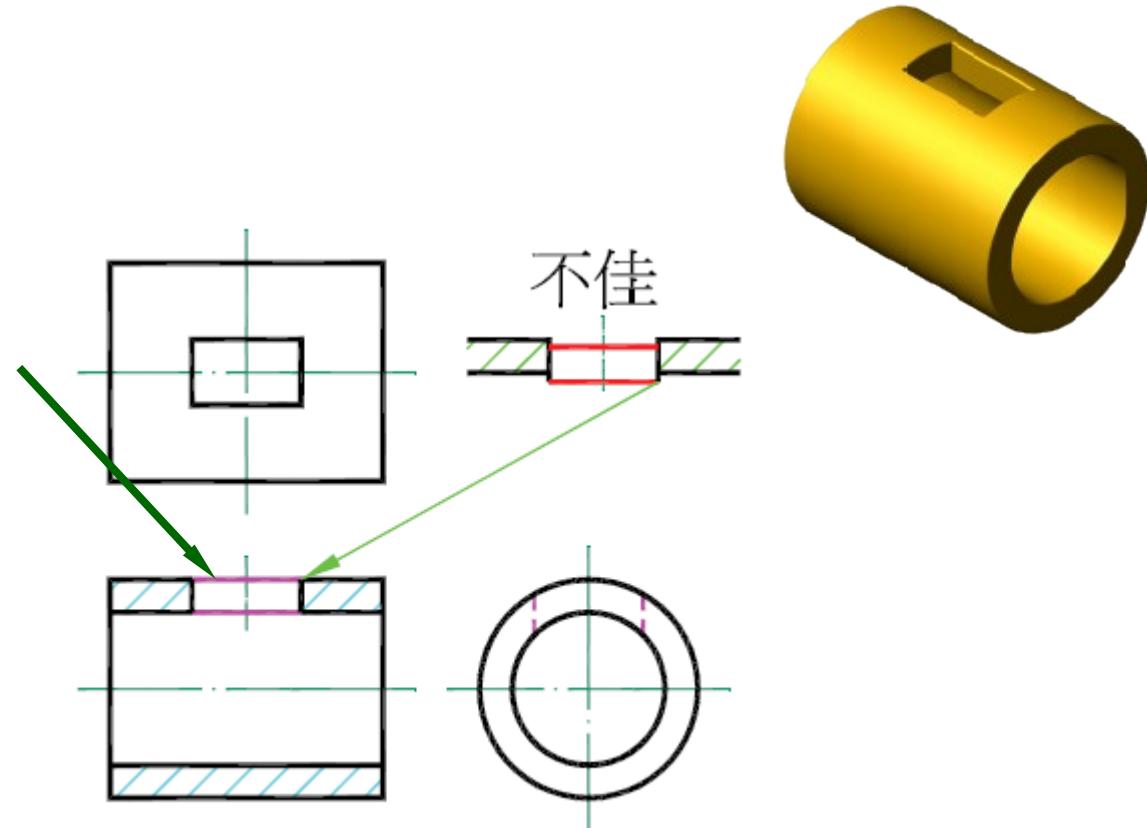


(b) 方孔邊長與套筒半徑相差不大

CAD圖

圖 13.57 角柱與圓柱相交之交線習用畫法

2/3

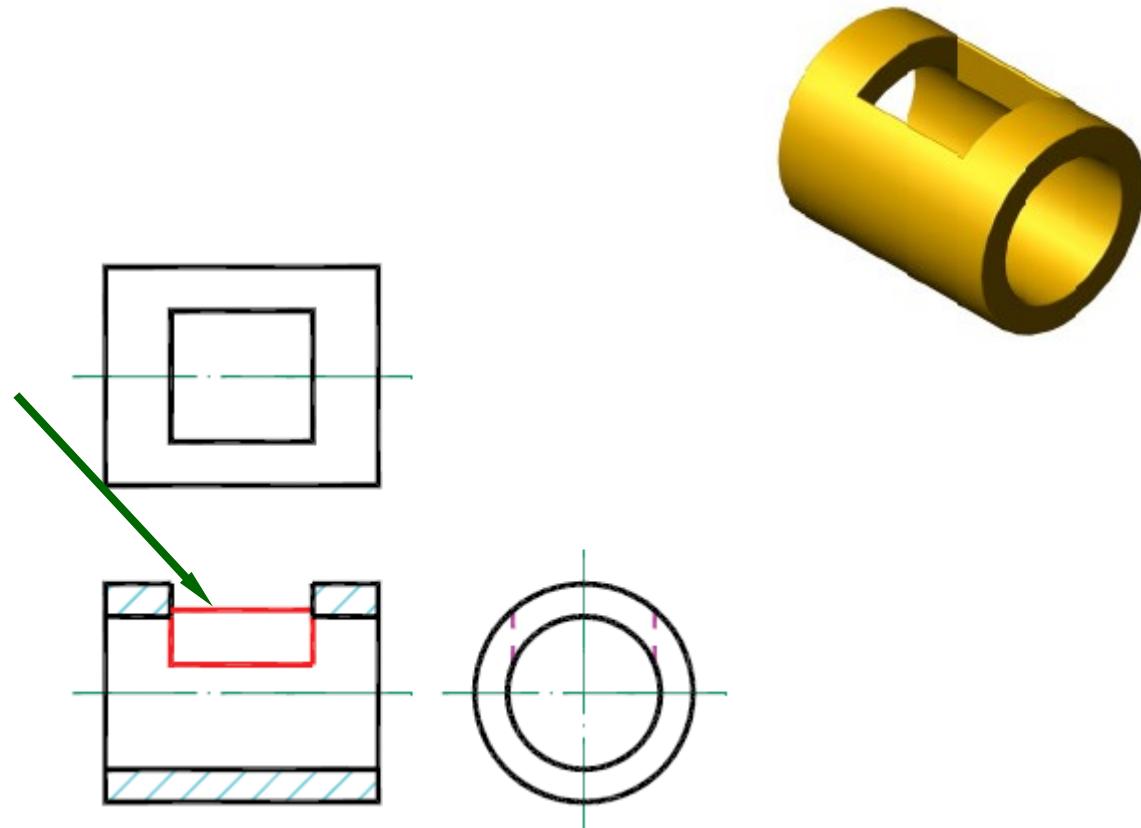


(a) 方孔邊長與套筒半徑相差甚大

CAD圖

圖 13.57 角柱與圓柱相交之交線習用畫法

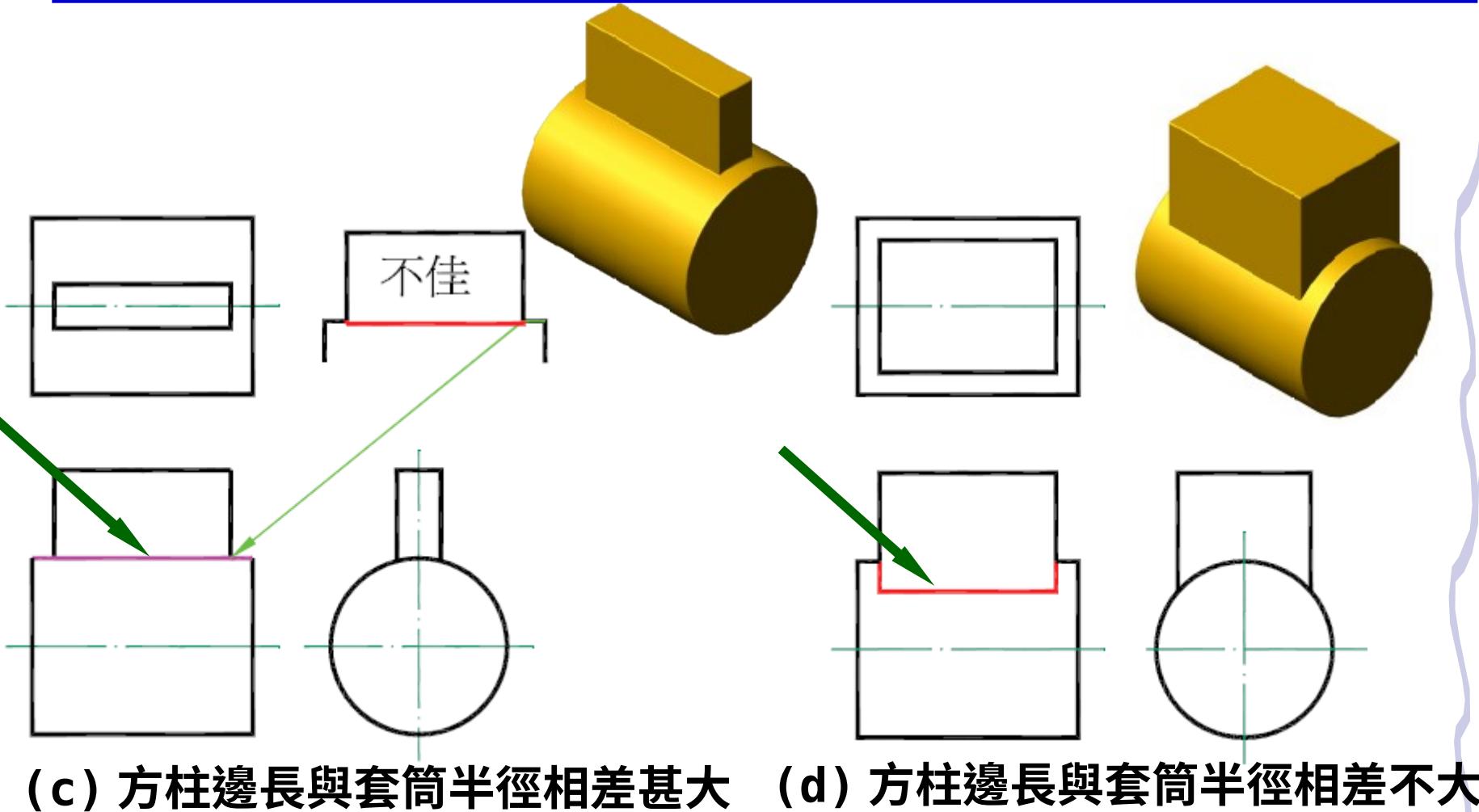
3/3



(b) 方孔邊長與套筒半徑相差不大

CAD圖

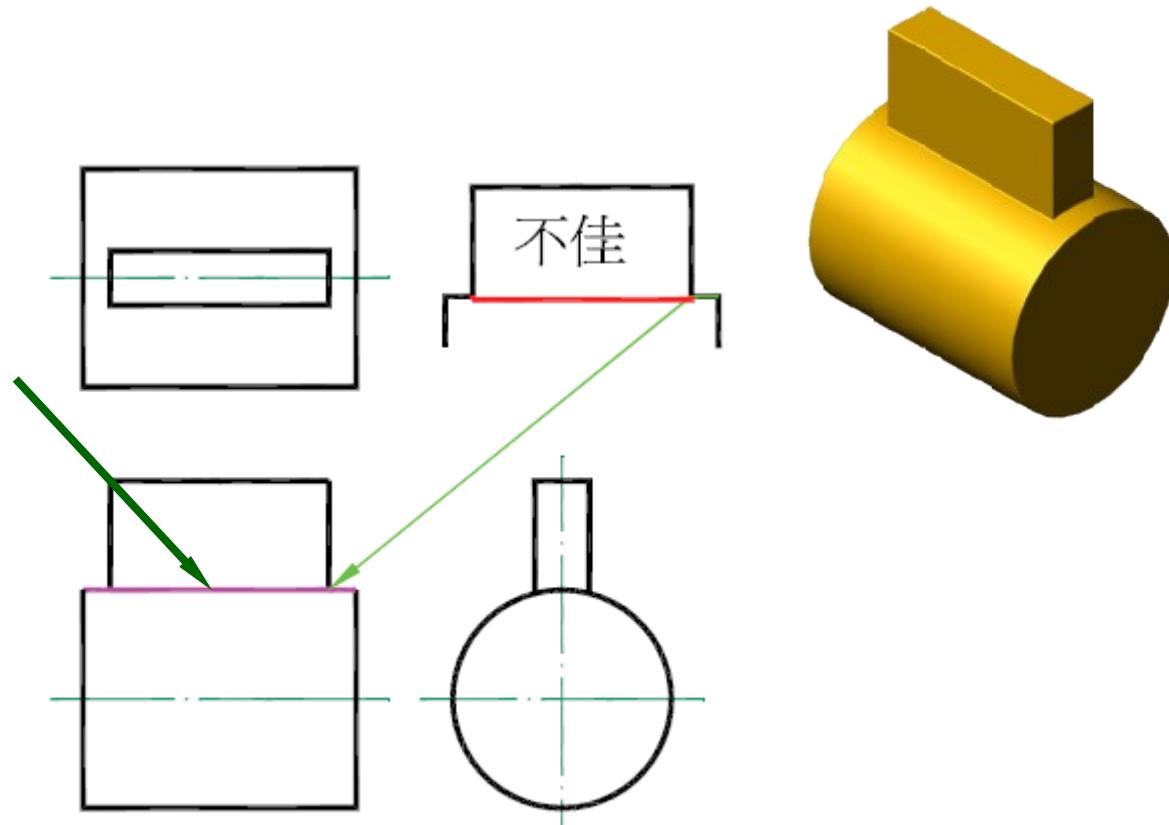
角柱與圓柱相交之交線習用畫法 -1/4



CAD圖

CAD圖

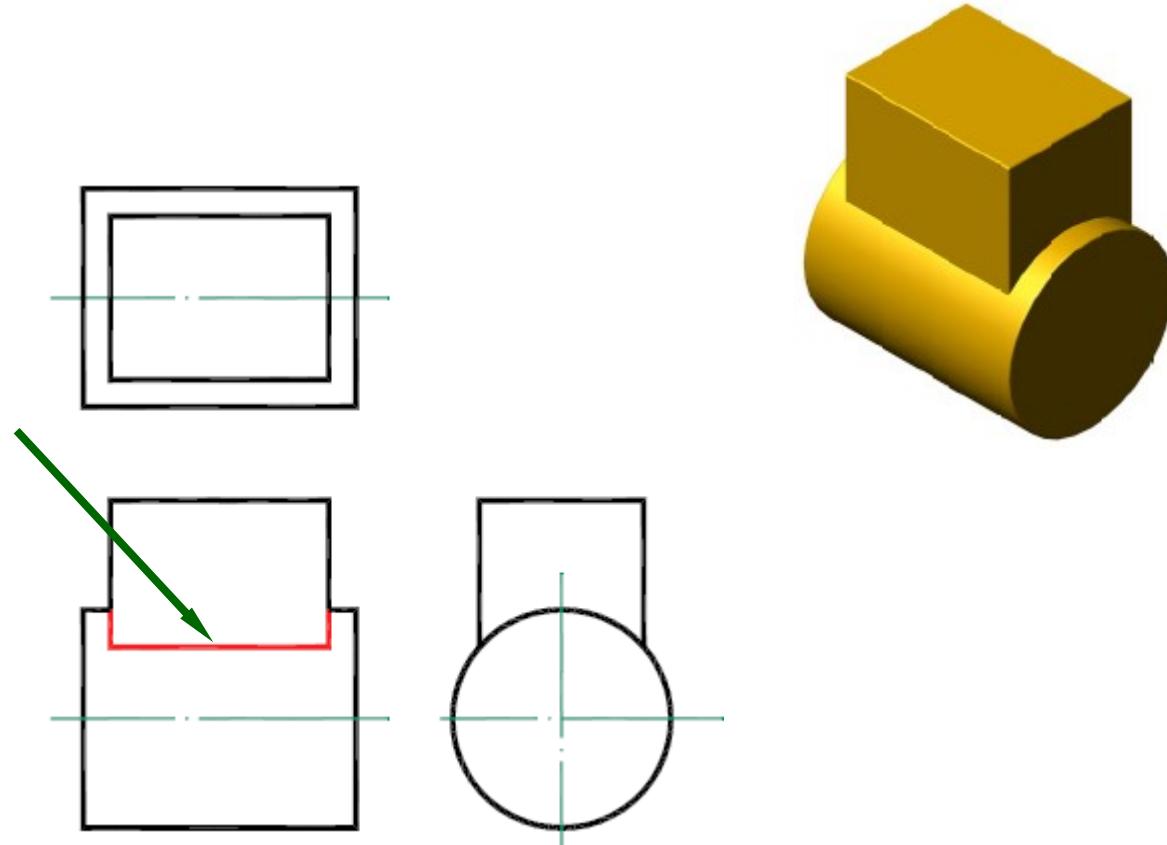
角柱與圓柱相交之交線習用畫法 -2/4



(c) 方柱邊長與套筒半徑相差甚大

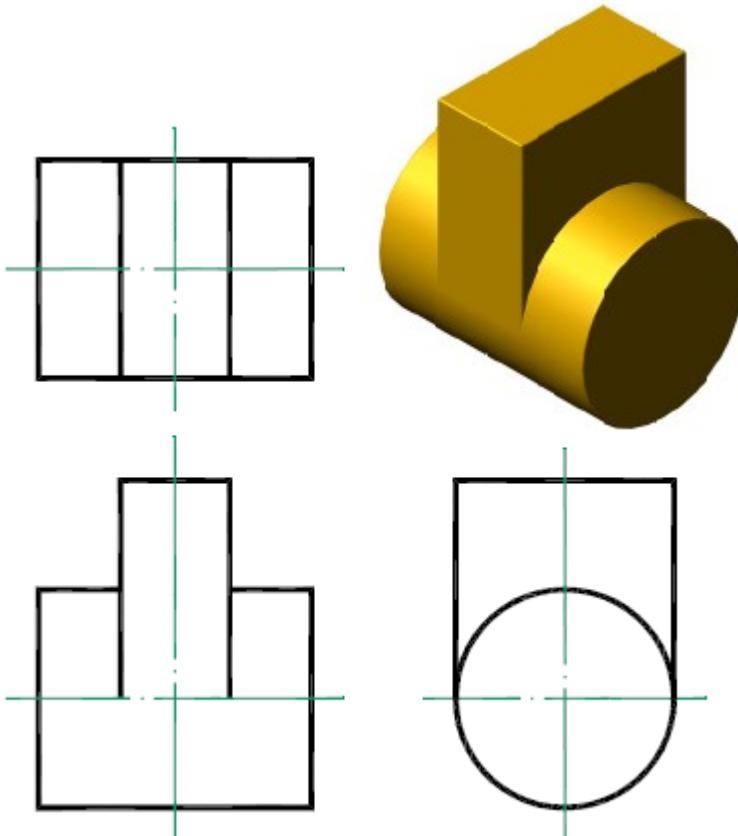
CAD圖

角柱與圓柱相交之交線習用畫法 -3/4



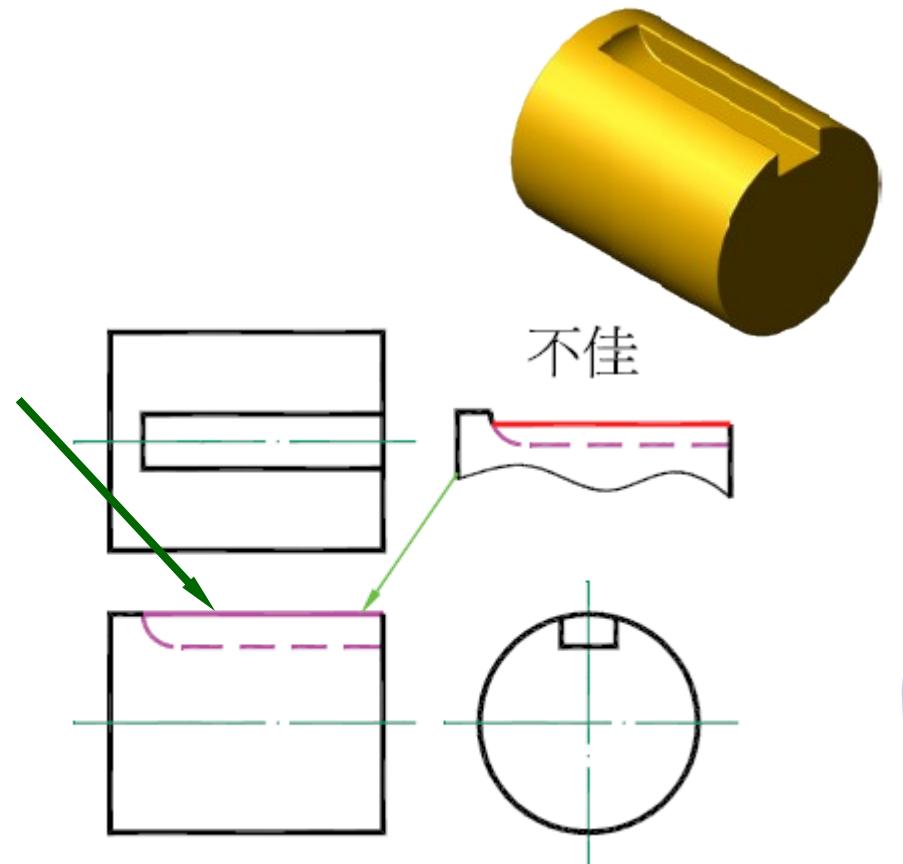
(d) 方柱邊長與套筒半徑相差不大

角柱與圓柱相交之交線習用畫法 -4/4



(e) 長方柱邊長與套筒半徑完全相同

CAD圖

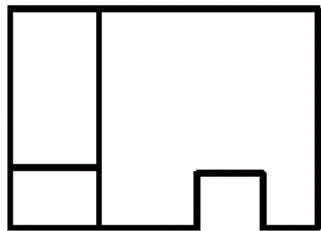


(f) 鍵槽寬與圓柱半徑相差甚大

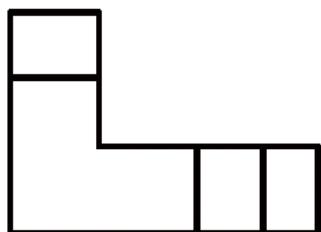
CAD圖

圖 13.58 形體分析法閱讀第三角法視圖 -

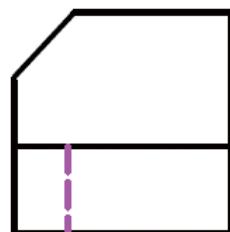
1/4



TOP



FRONT

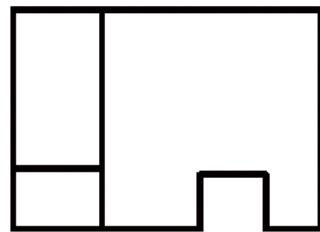


RIGHT

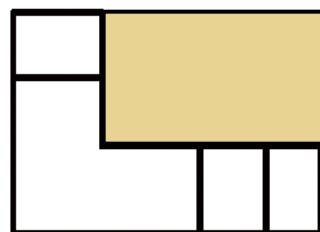
(a)

CAD圖

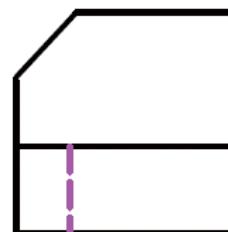
圖 13.58 形體分析法閱讀第三角法視圖 -2/4



TOP

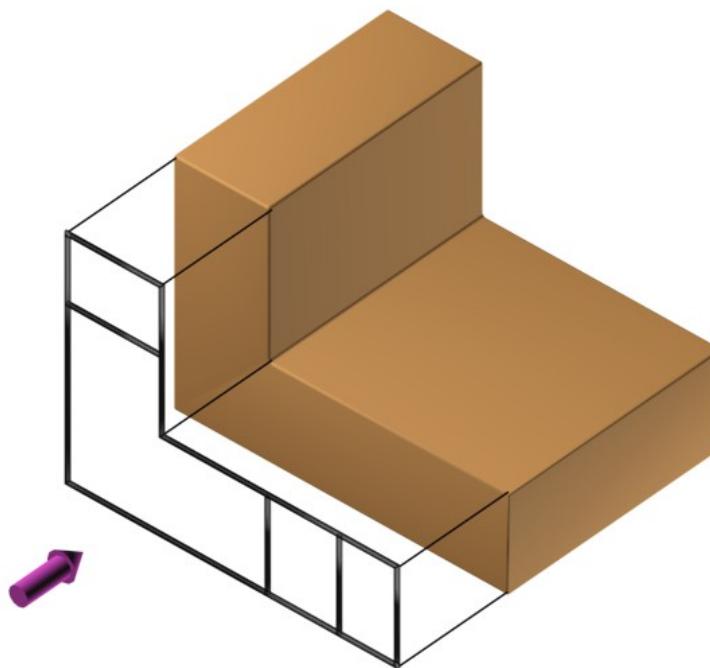


FRONT



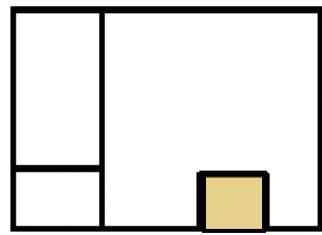
RIGHT

(a)

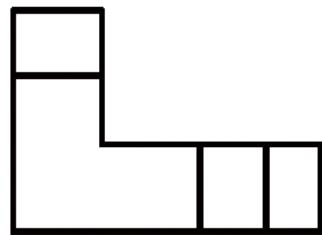


CAD圖

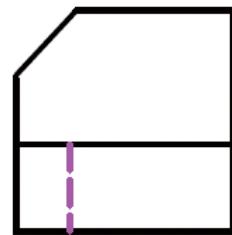
圖 13.58 形體分析法閱讀第三角法視圖 -3/4



TOP

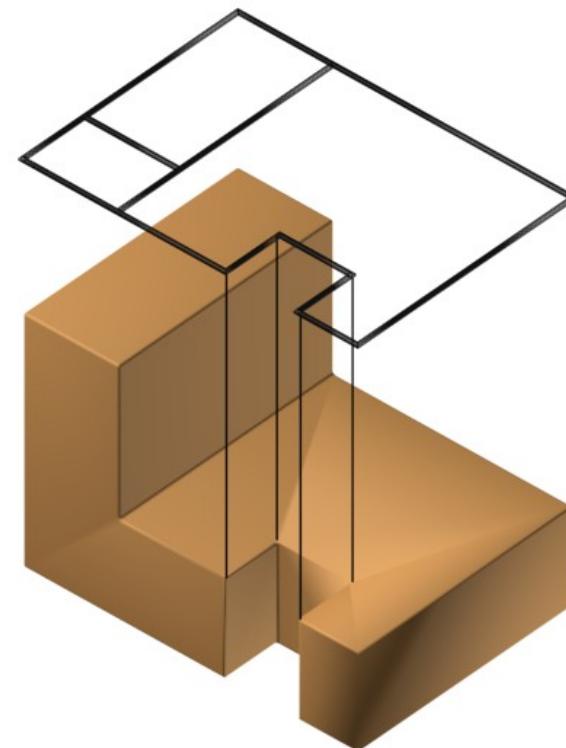


FRONT



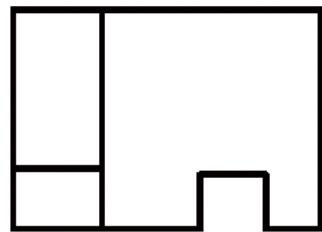
RIGHT

(a)

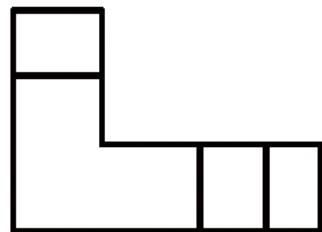


CAD圖

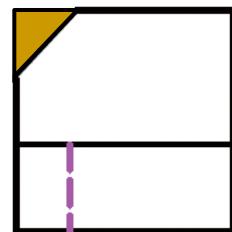
圖 13.58 形體分析法閱讀第三角法視圖 -4/4



TOP

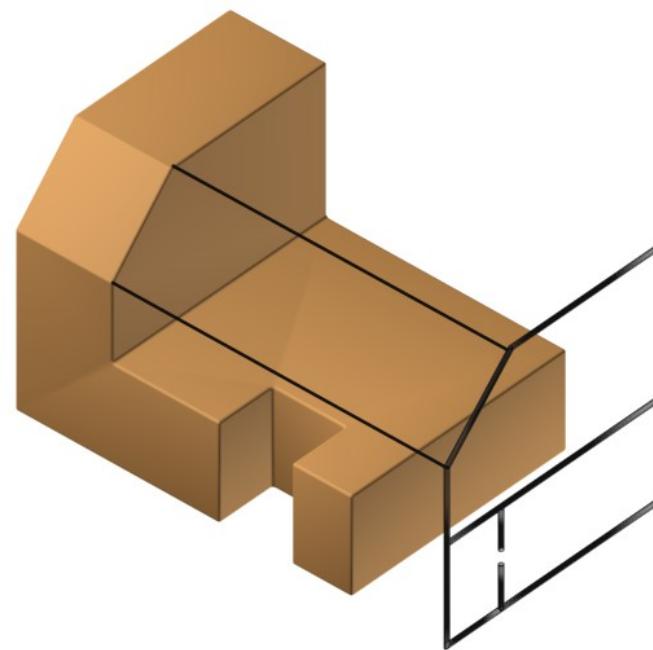


FRONT



RIGHT

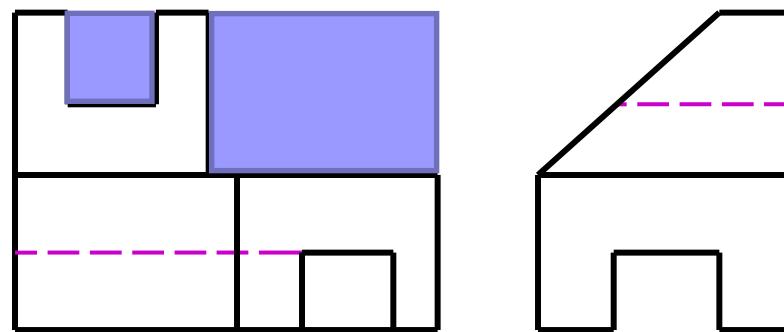
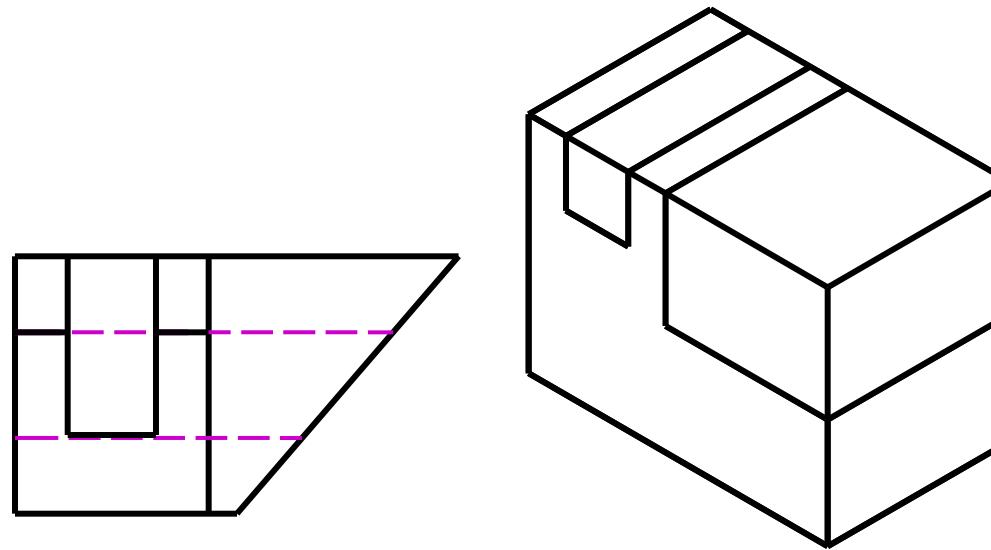
(a)



CAD圖

形體分析法閱讀第三角法視圖

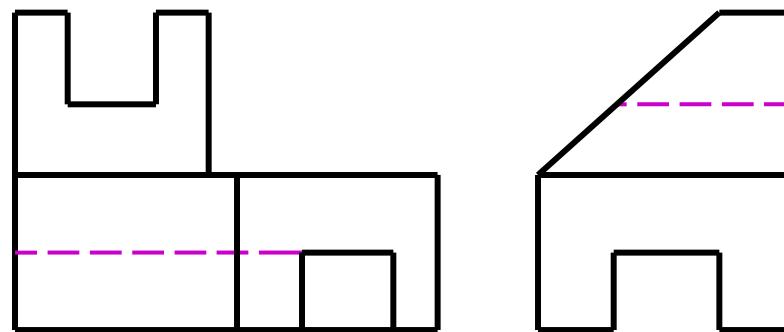
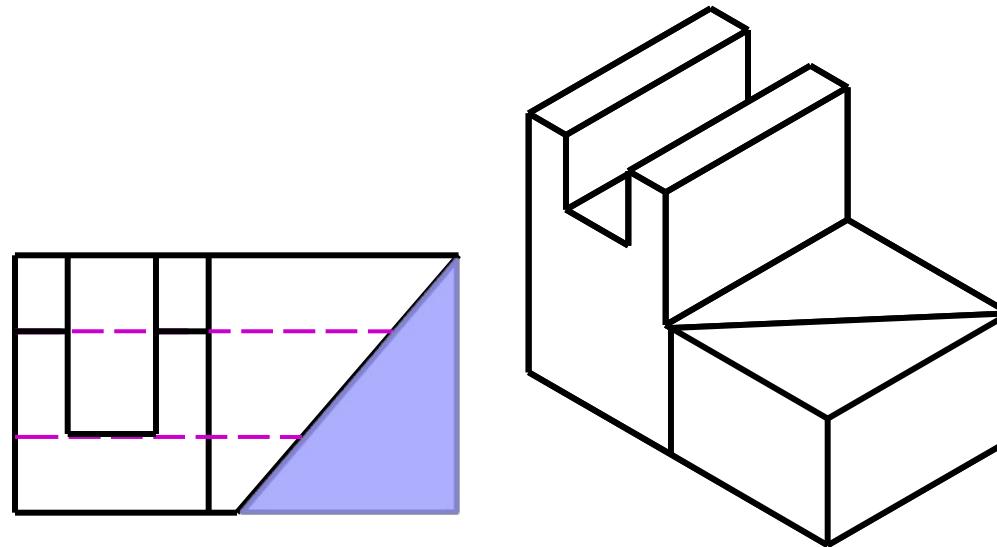
(二) 1/3



CAD 圖

形體分析法閱讀第三角法視圖

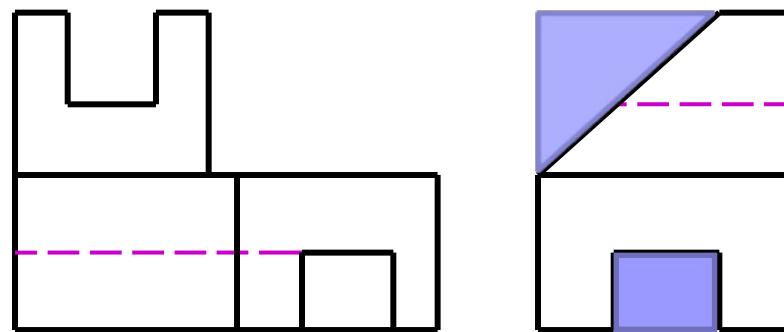
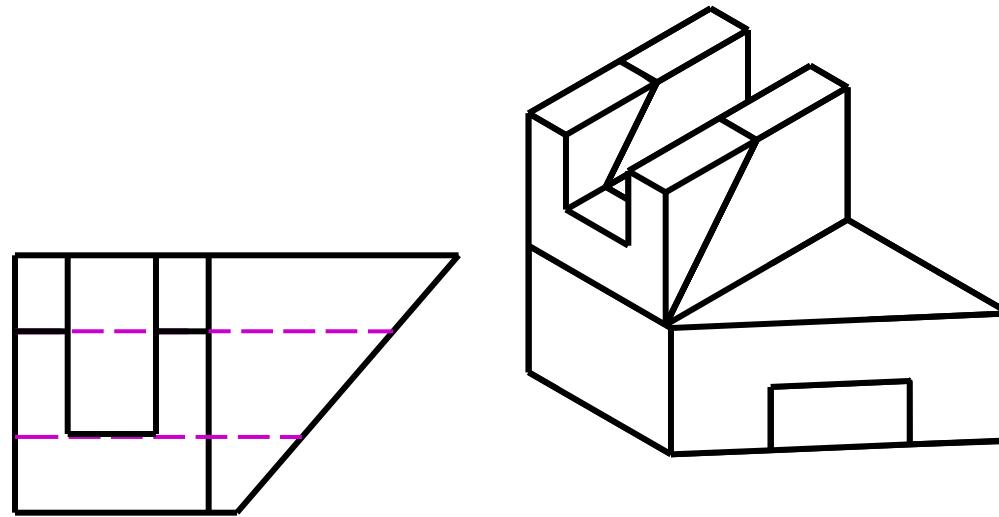
(二) 2/3



CAD 圖

形體分析法閱讀第三角法視圖

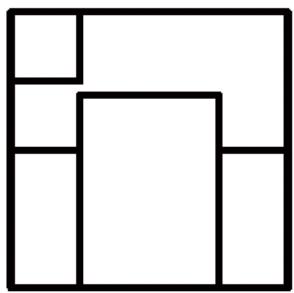
(二) 3/3



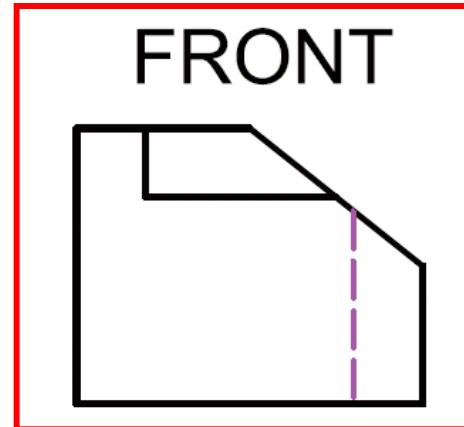
CAD 圖

形體分析法閱讀第一角法視圖 -1/4

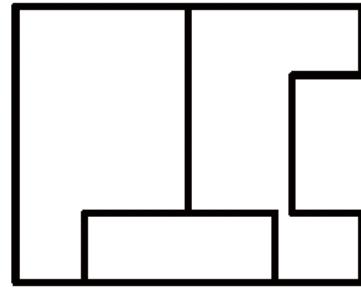
RIGHT



FRONT



TOP

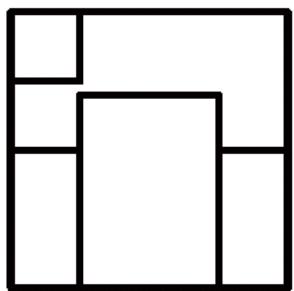


CAD圖

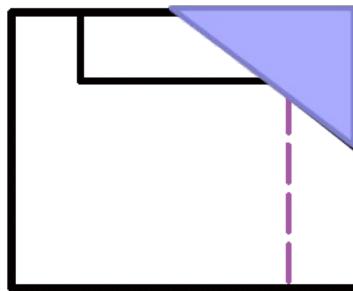
(a)

形體分析法閱讀第一角法視圖 -2/4

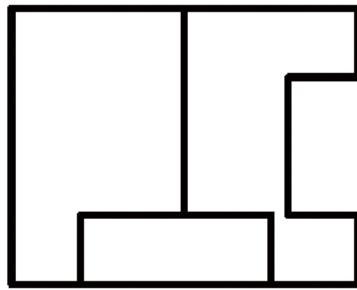
RIGHT



FRONT

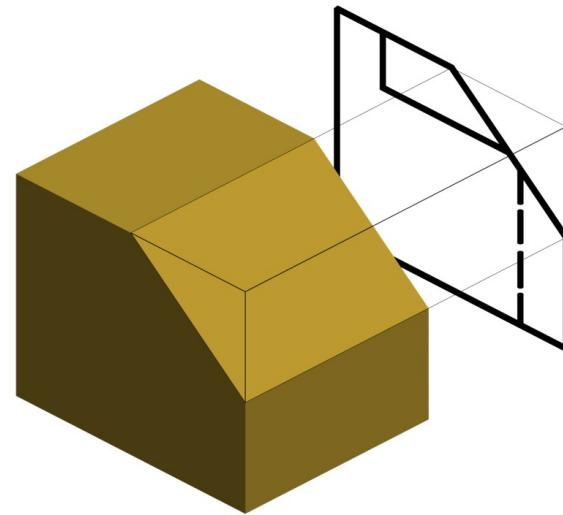


TOP



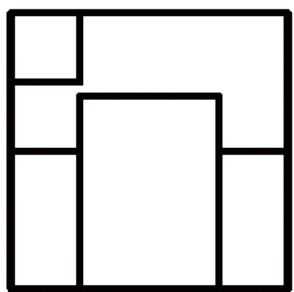
CAD圖

(a)

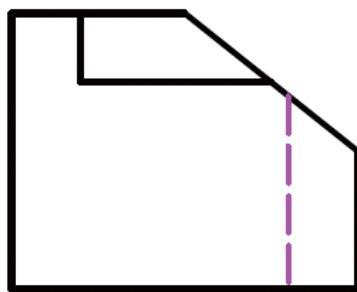


形體分析法閱讀第一角法視圖 -3/4

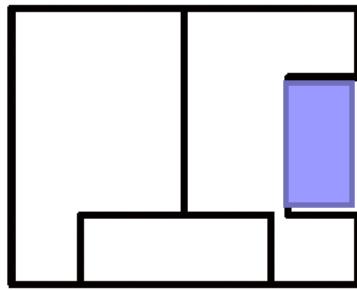
RIGHT



FRONT

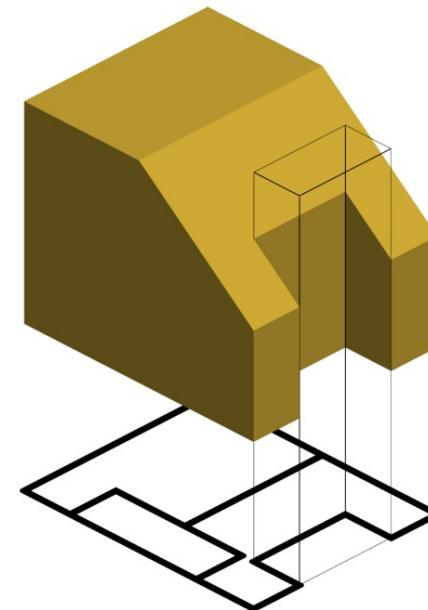


TOP



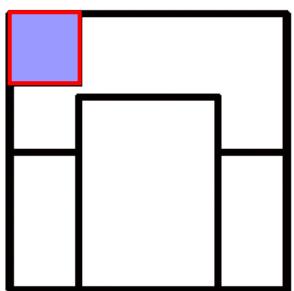
CAD圖

(a)

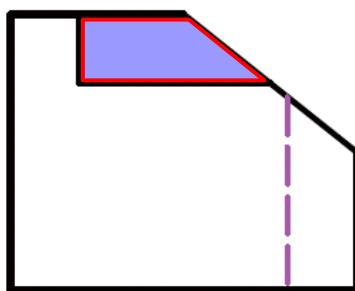


形體分析法閱讀第一角法視圖 -4/4

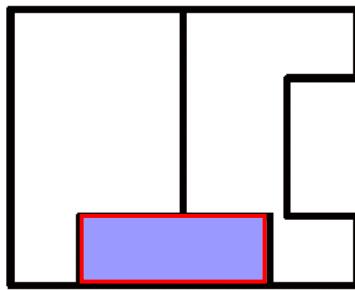
RIGHT



FRONT

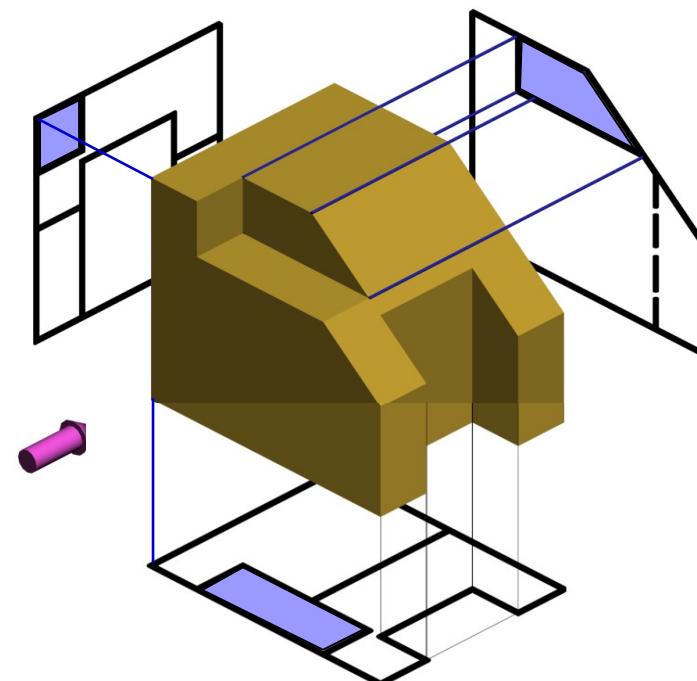


TOP



CAD圖

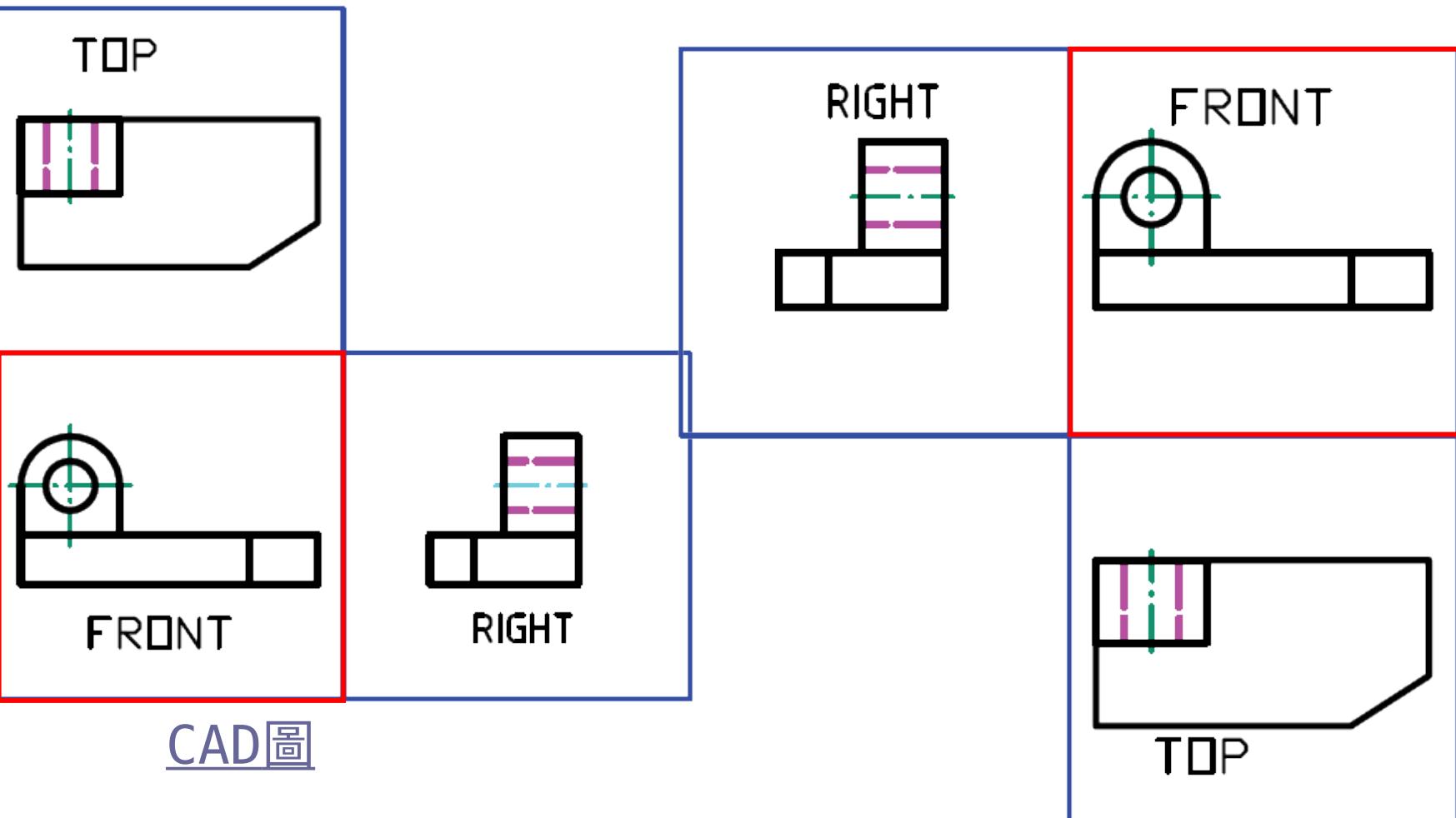
(a)



第一角法與第三角法讀圖的差異 -1/4

讀圖時第三角法視圖向後折
向前折

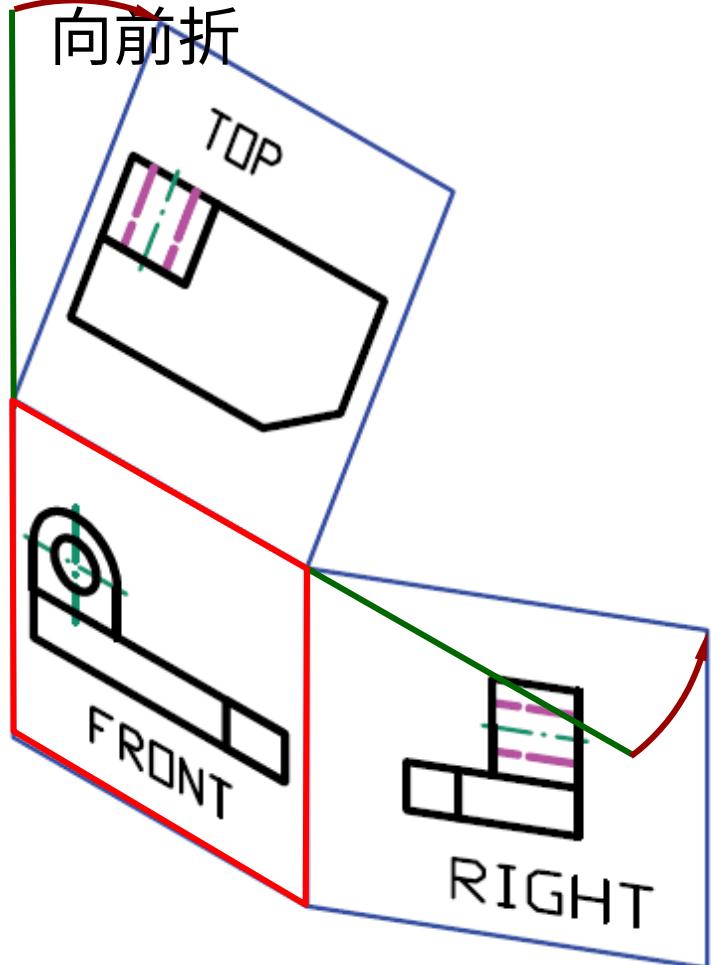
第一角法視圖



第一角法與第三角法讀圖的差異 -2/4

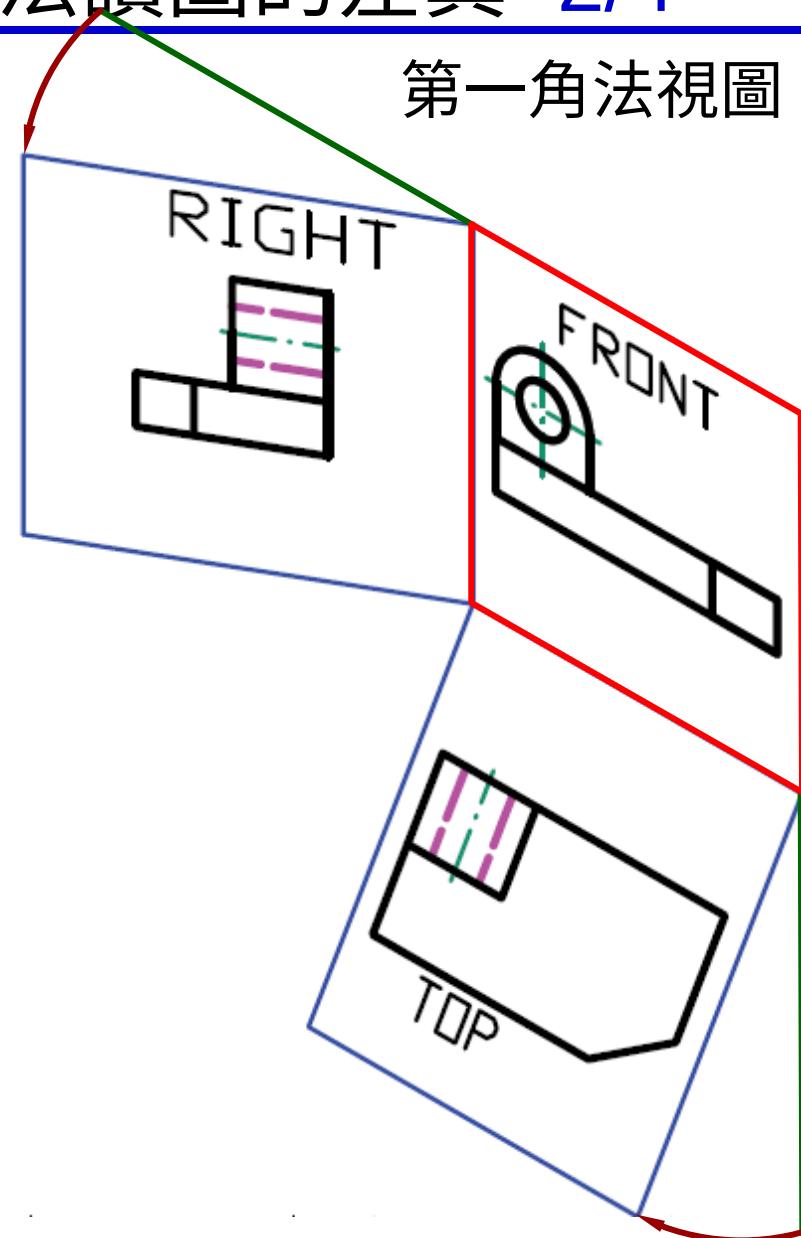
讀圖時第三角法視圖向後折

向前折



CAD圖

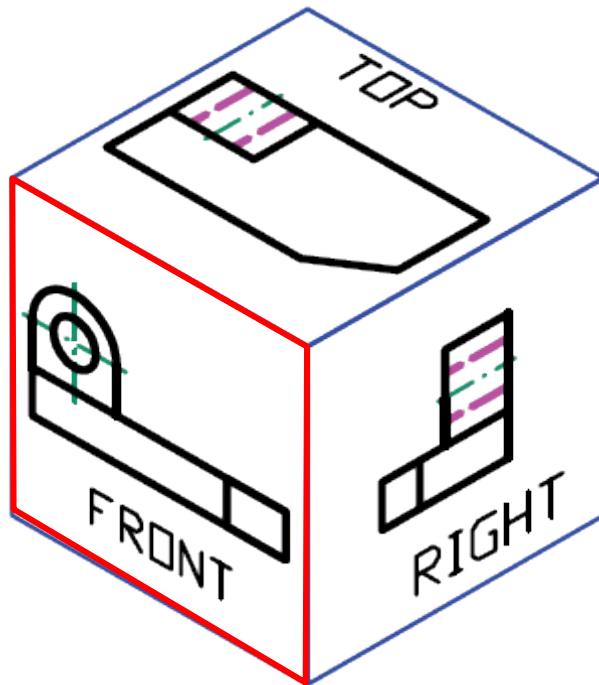
第一角法視圖



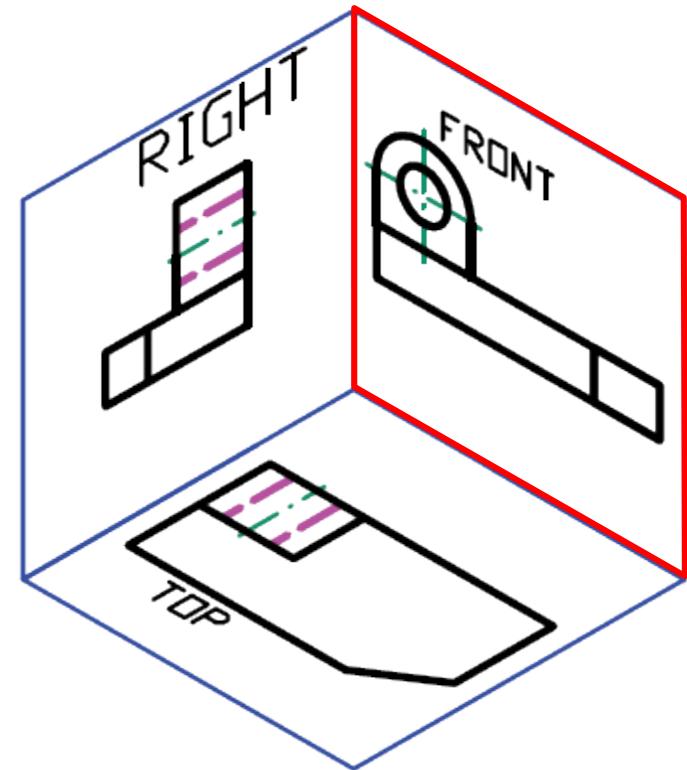
第一角法與第三角法讀圖的差異 -3/4

讀圖時第三角法視圖向後折
向前折

第一角法視圖



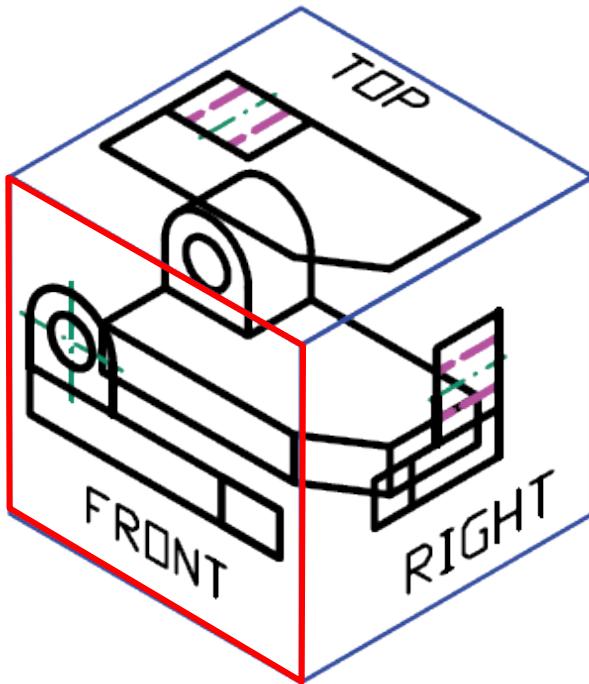
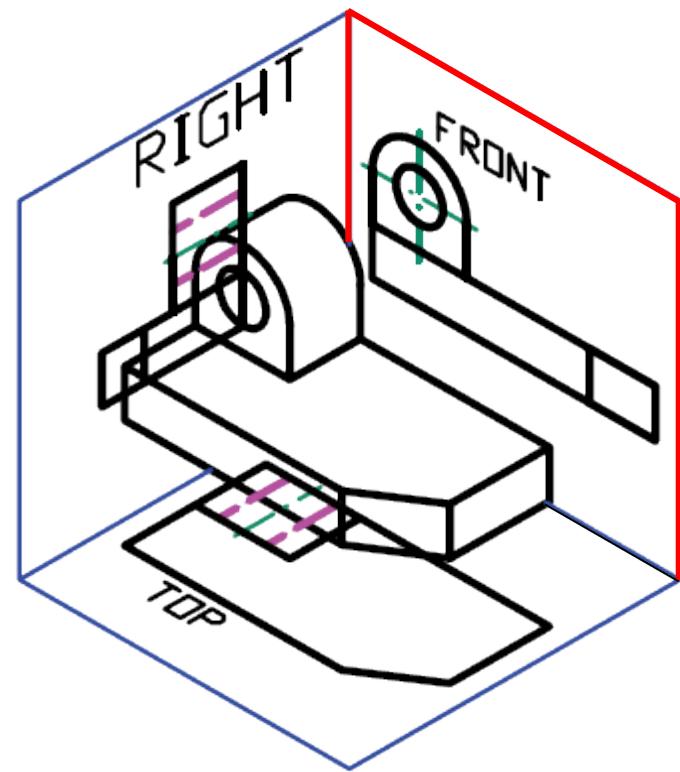
CAD圖



第一角法與第三角法讀圖的差異 -4/4

讀圖時第三角法視圖向後折
向前折

第一角法視圖

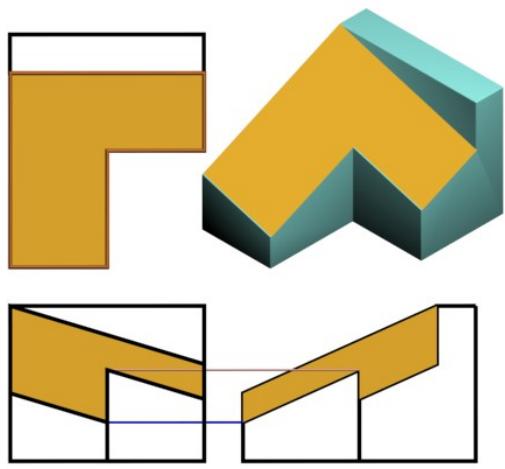


CAD圖

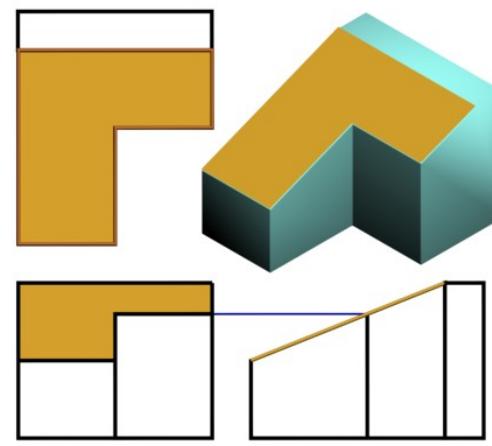
點線面分析法

- 三種平面之端點在各視圖的對應關係：
 - 複斜面：在一視圖呈現同樣邊數的面，且各端點的位置必然在視圖間互相對應。
 - 單斜面：若物體之一視圖有一多邊形，無法在某一視圖找到對應之多邊形，則此面必然為單斜面，在無法找到對應多邊形的視圖呈現邊視圖，且邊視圖上必須與多邊形各端點有對應點。
 - 正垂面：有兩視圖皆呈邊視圖，一視圖中呈現實形。

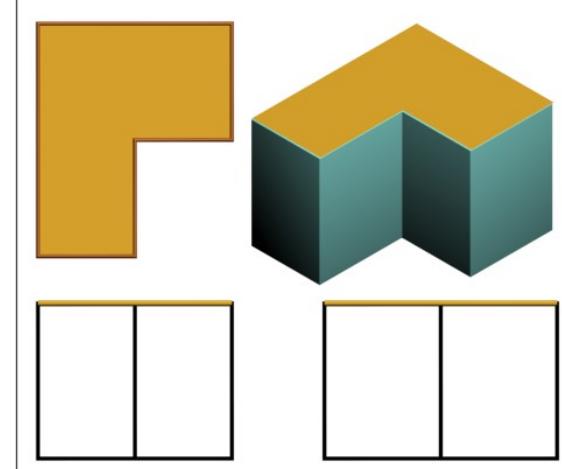
圖 15.3 平面種類



(a) 複斜面

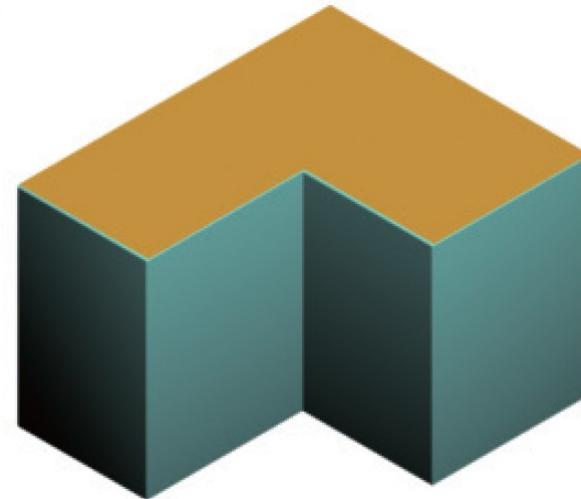
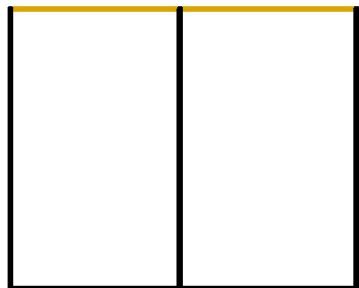
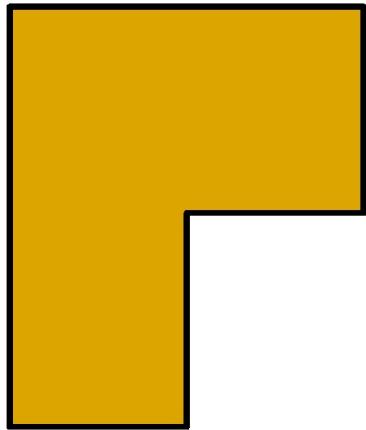


(b) 單斜面



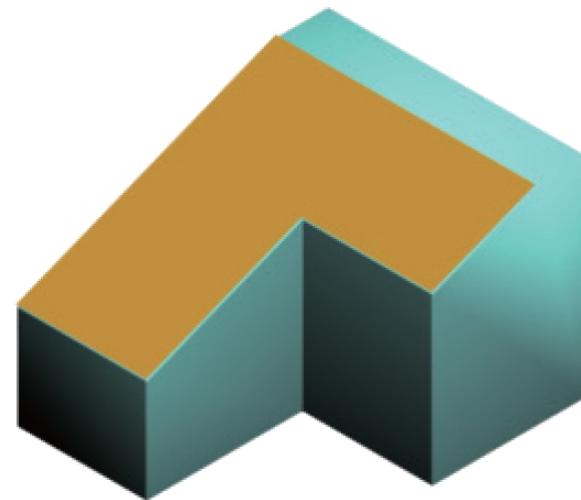
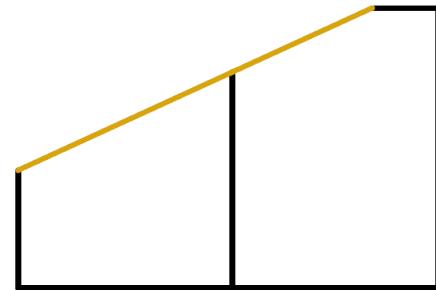
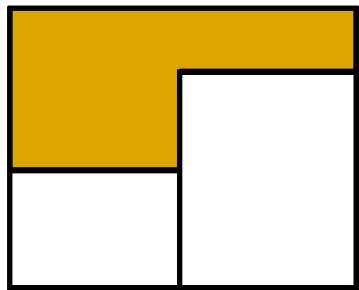
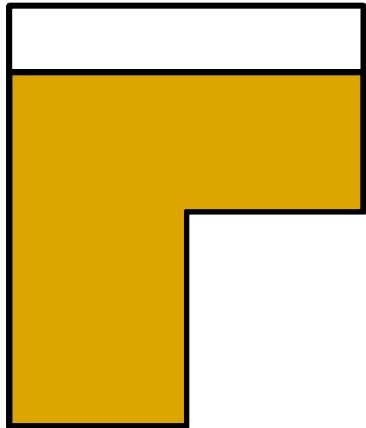
(c) 正垂面

圖 15.3 平面種類 -2/4



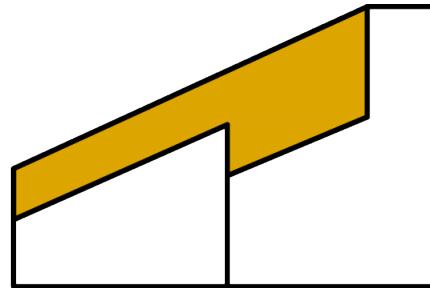
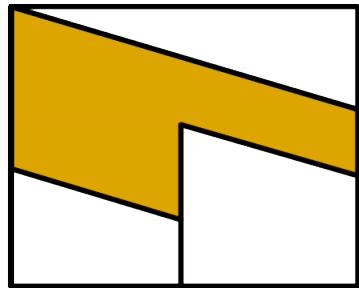
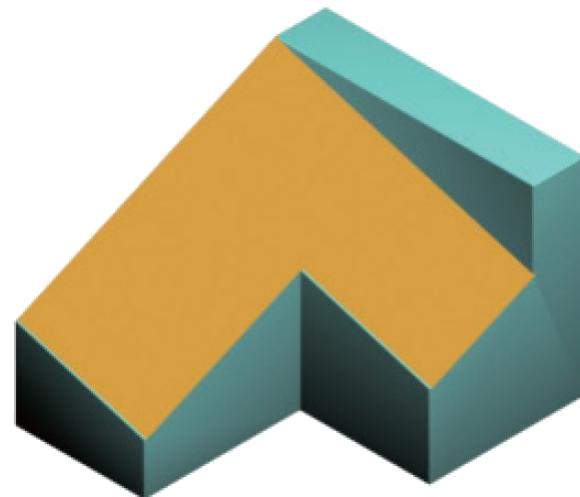
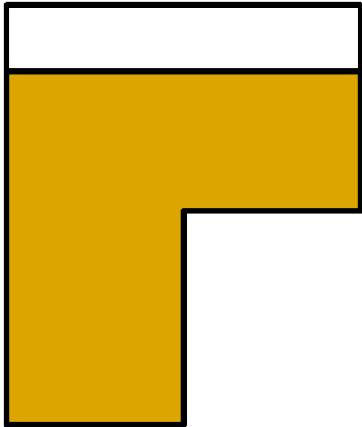
正垂面

圖 15.3 平面種類 -3/4



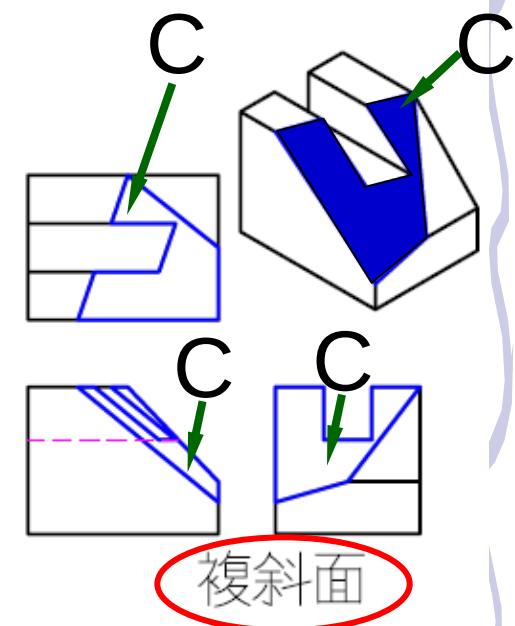
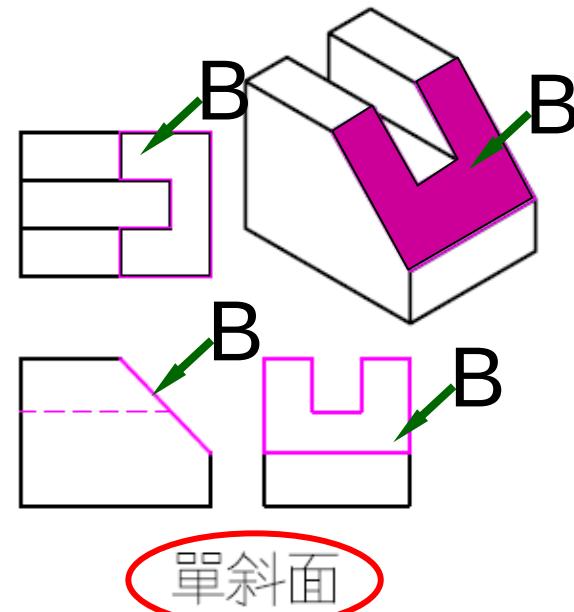
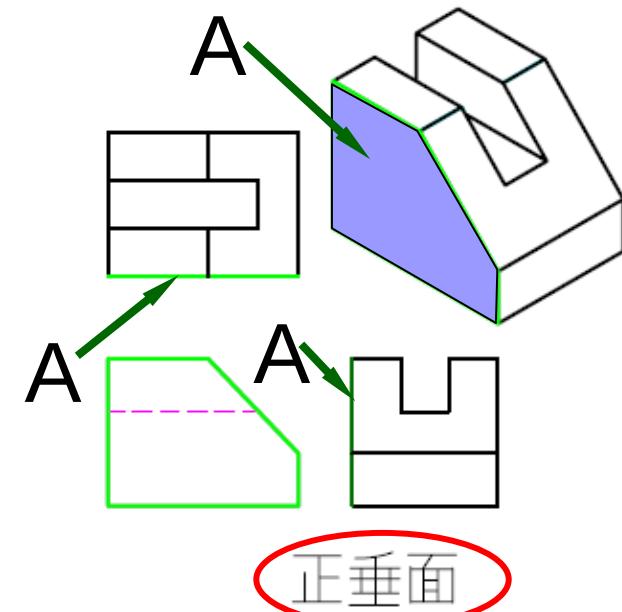
單斜面

圖 15.3 平面種類 -4/4



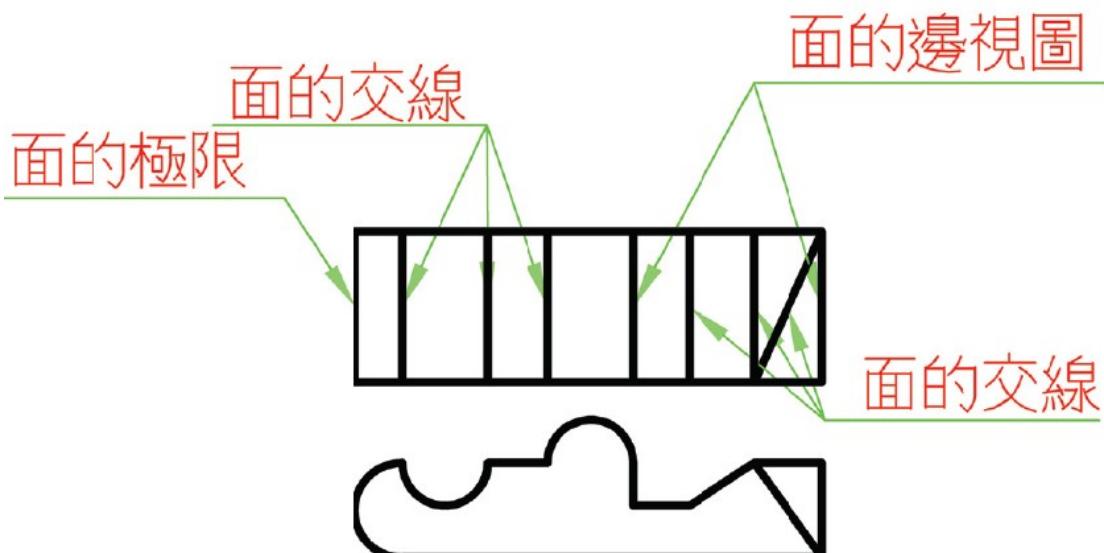
複斜面

一平面在各視圖呈現相似形狀

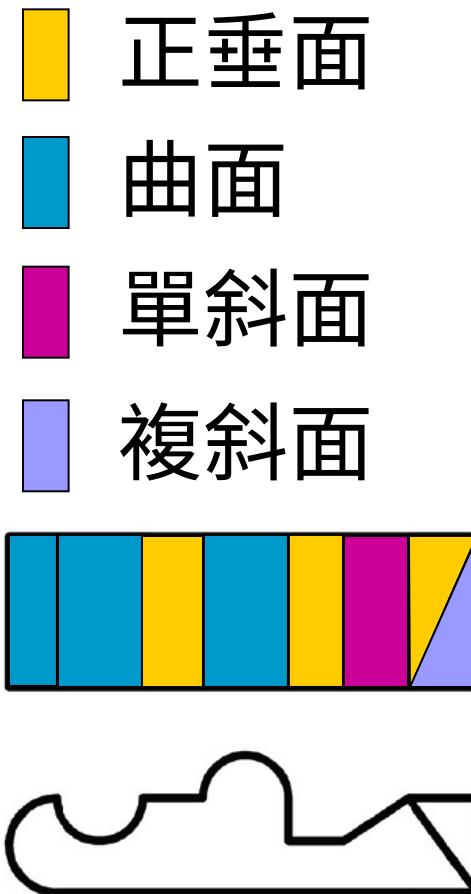


CAD圖

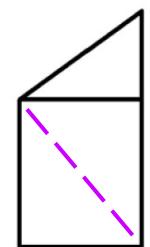
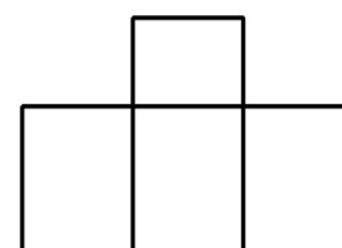
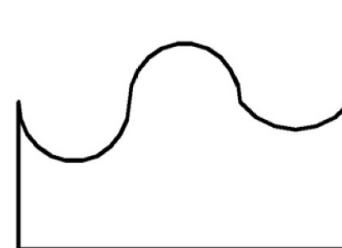
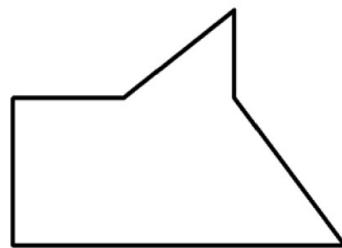
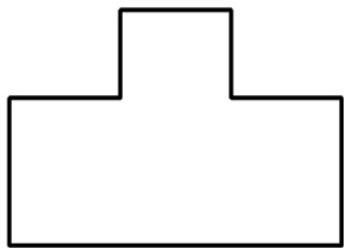
視圖中面的意義



CAD圖

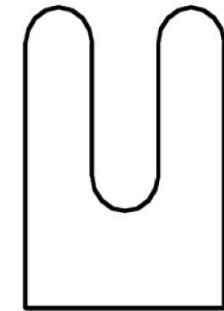
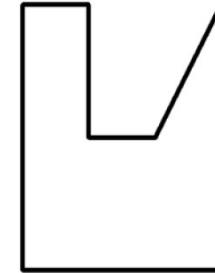
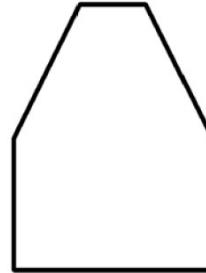
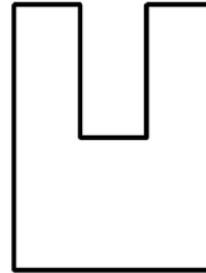
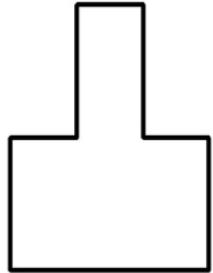
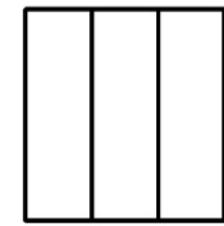
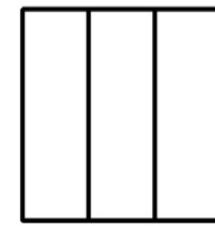
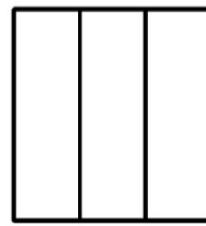
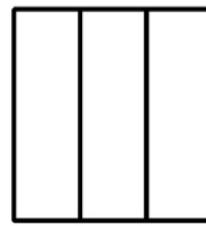
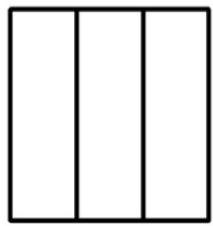


兩鄰接面必定不在同一平面(因高低，斜度，凹凸的差異)



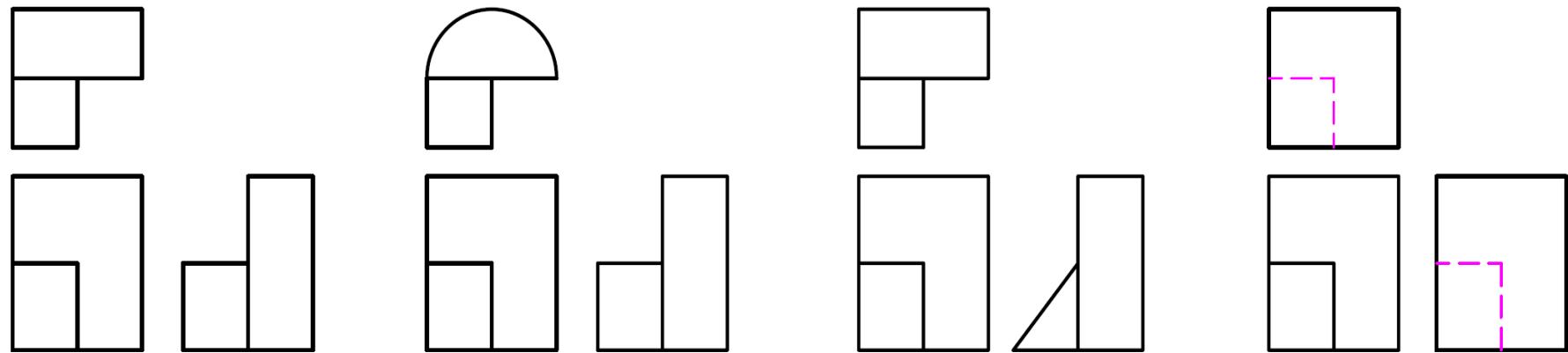
CAD圖

考察各視圖以想像出物體形狀 1/2



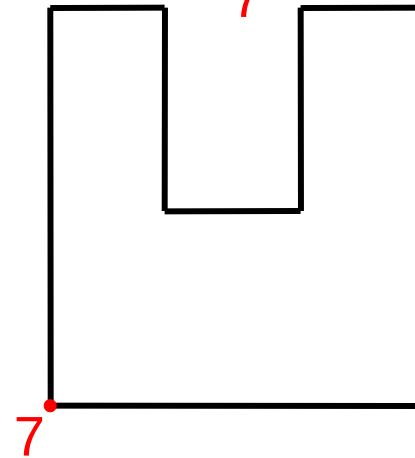
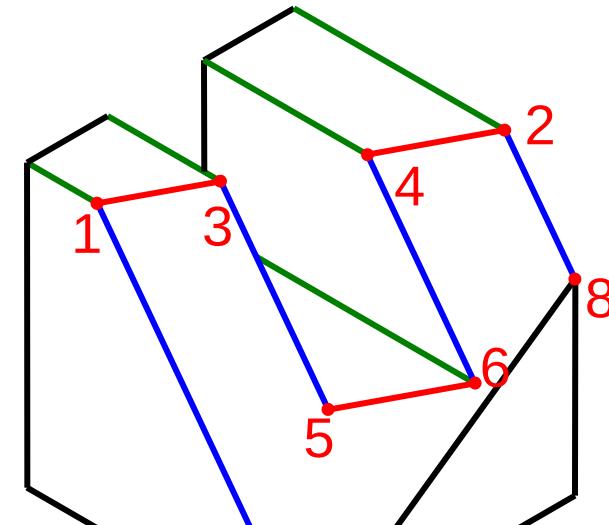
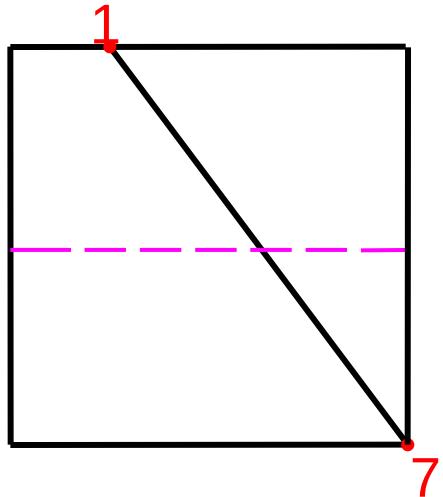
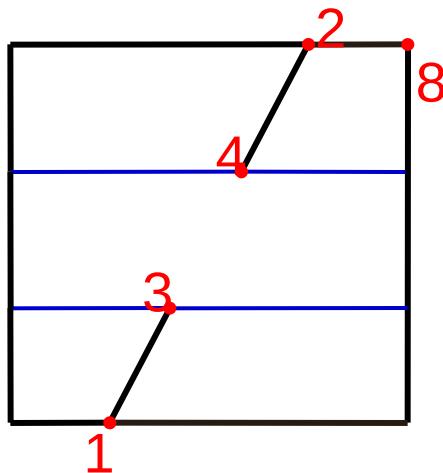
CAD圖

考察各視圖以想像出物體形狀 2/2

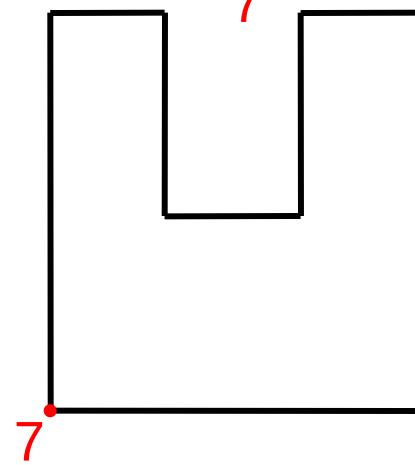
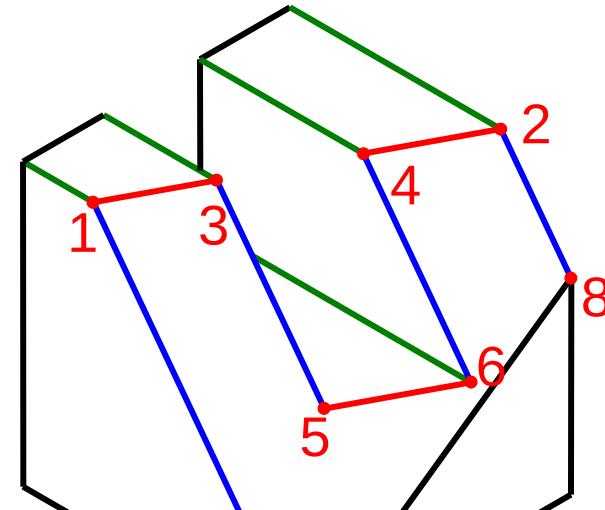
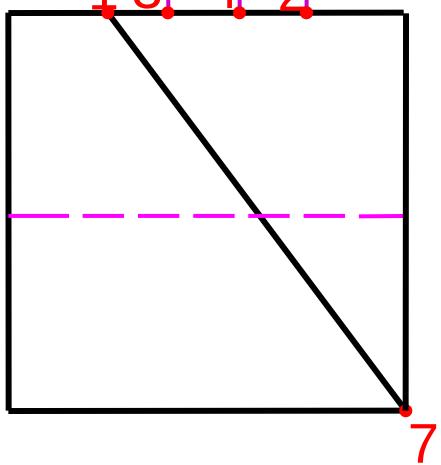
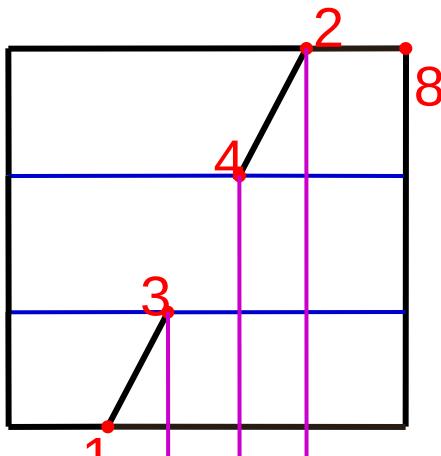


CAD圖

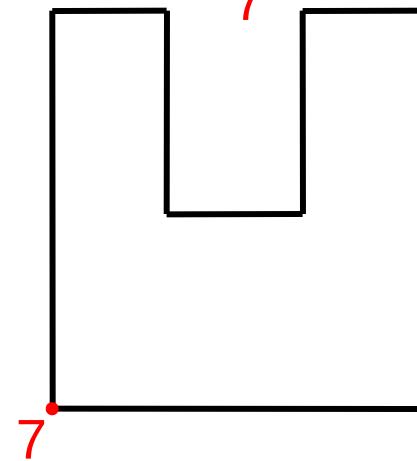
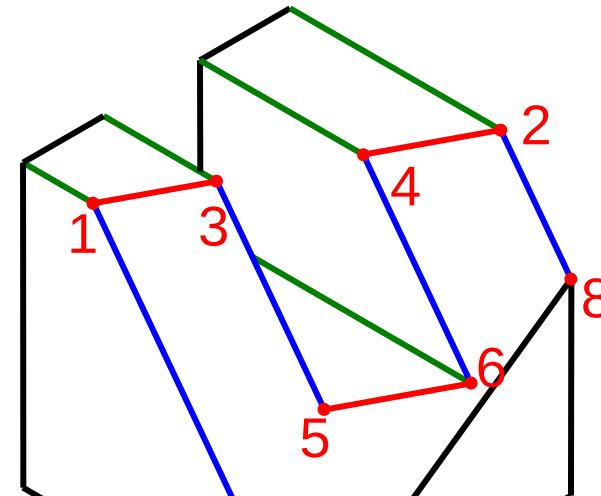
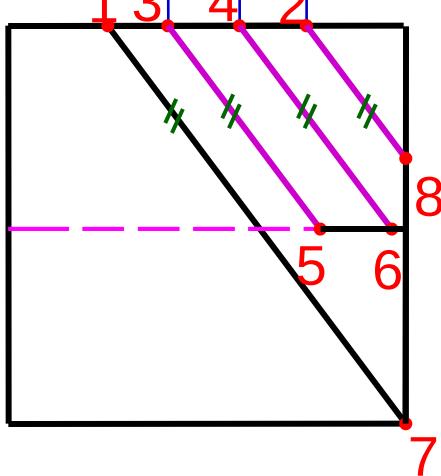
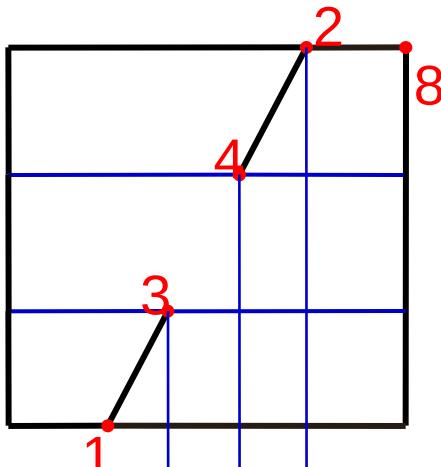
平行線的畫法 -1/5



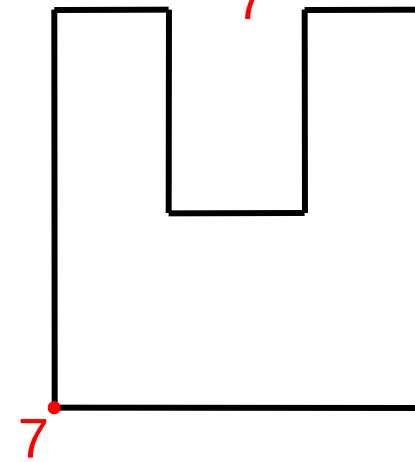
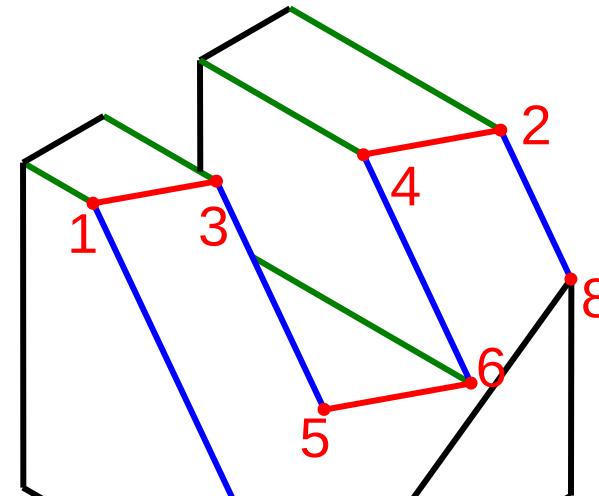
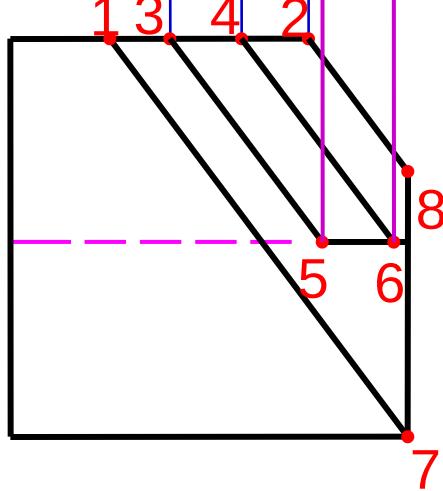
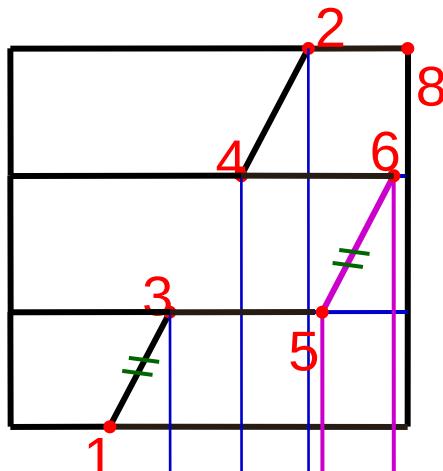
平行線的畫法 -2/5



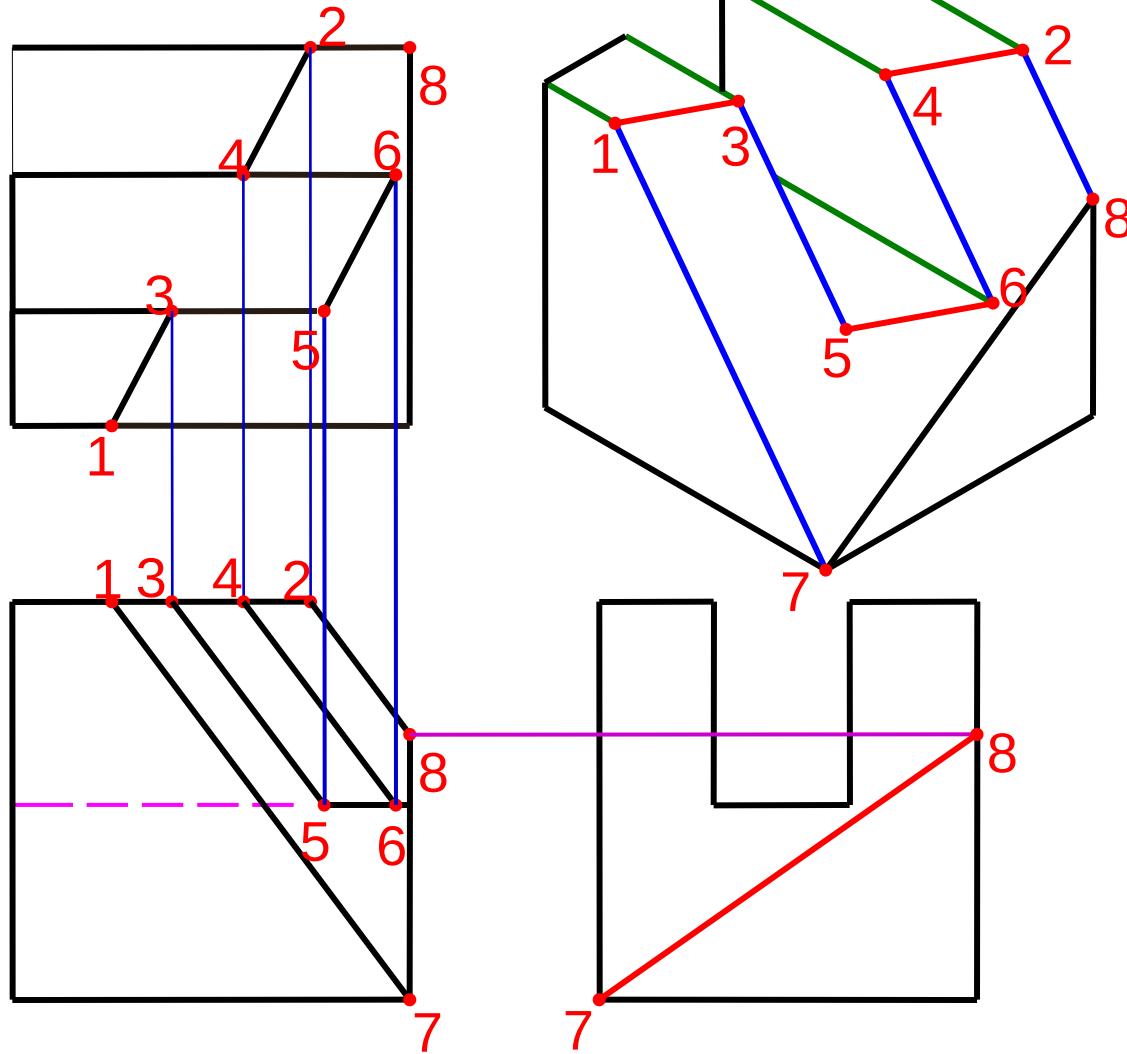
平行線的畫法 -3/5



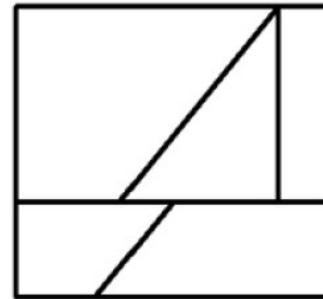
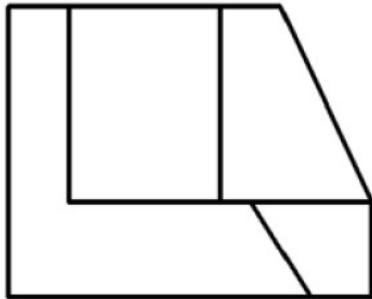
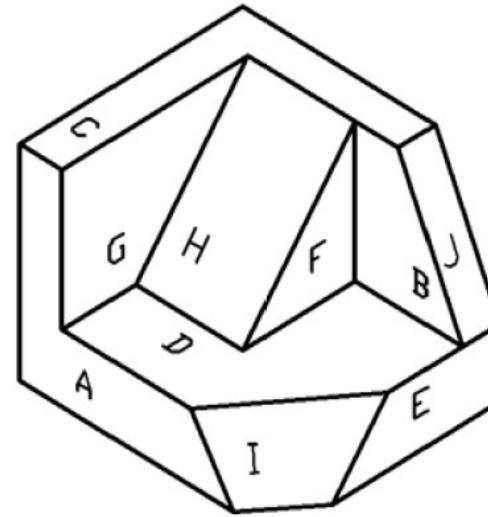
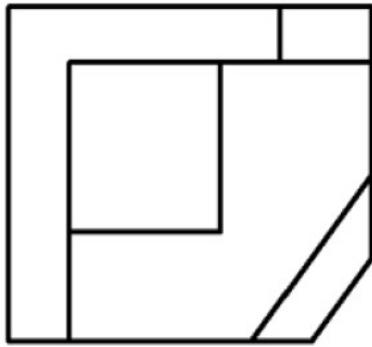
平行線的畫法 -4/5



平行線的畫法 -5/5



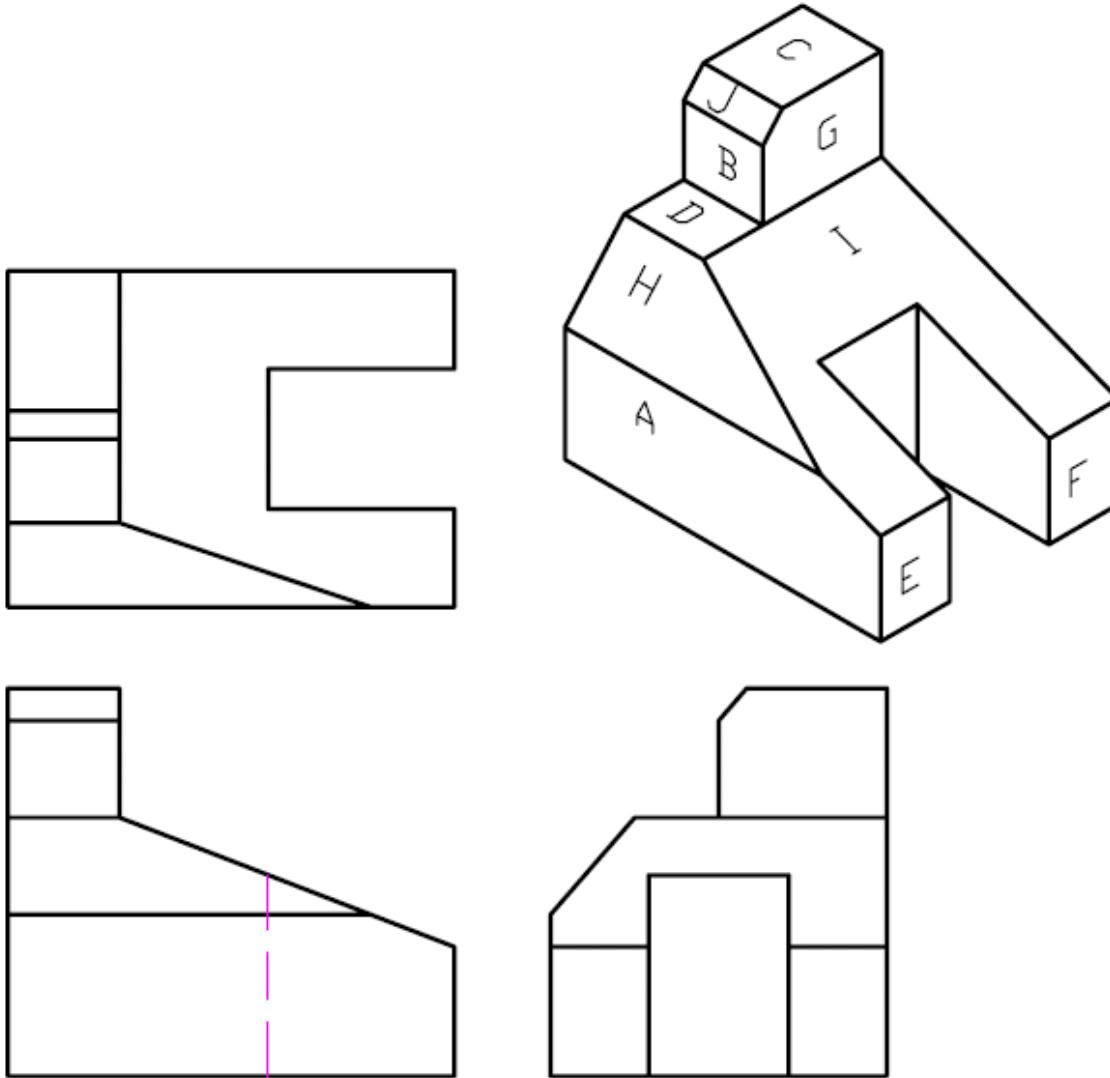
指出各面在三視圖的位置 1/2



CAD圖

指出各面在三視圖的位置 2/2

CAD圖



點線面分析法讀圖

- 先繪出恰能包住物體之方盒。
- 將三個視圖繪於方盒之對應面上。
- 逐一分析各面在立體的位置。

圖 13.61 點線面分析法 -1/9

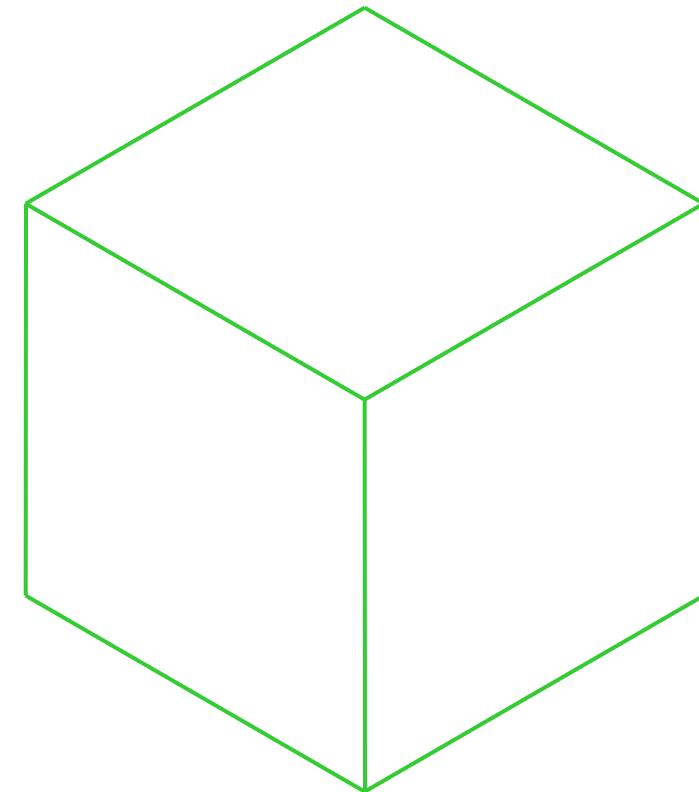
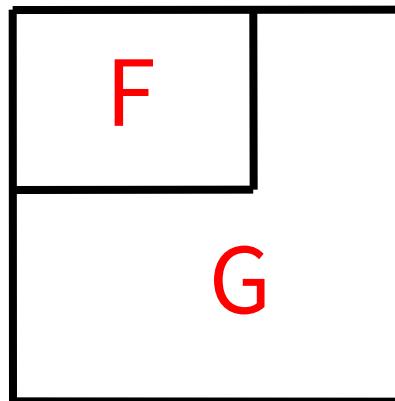
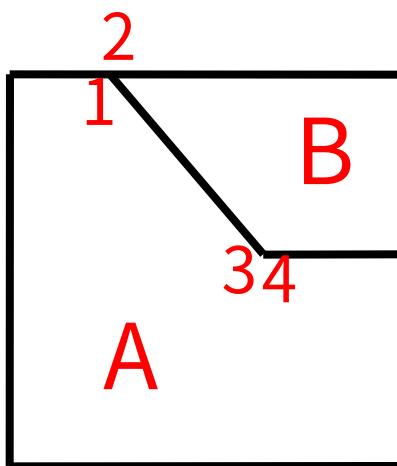
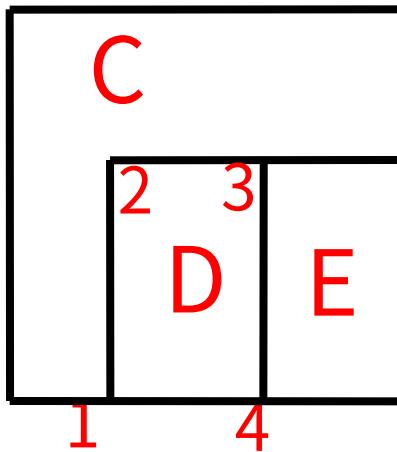


圖 13.61 點線面分析法 -2/9

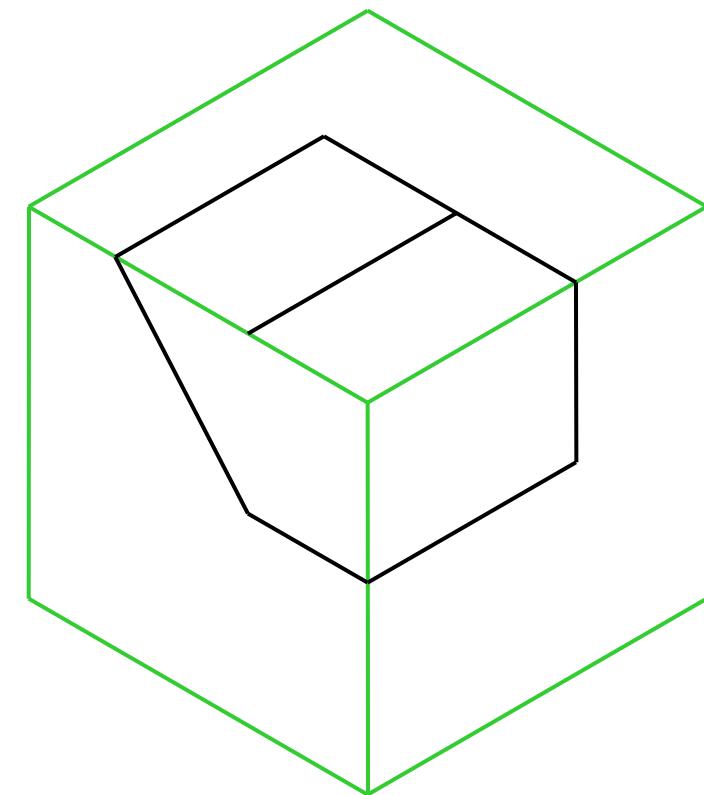
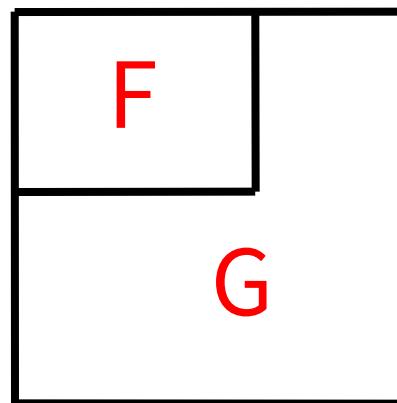
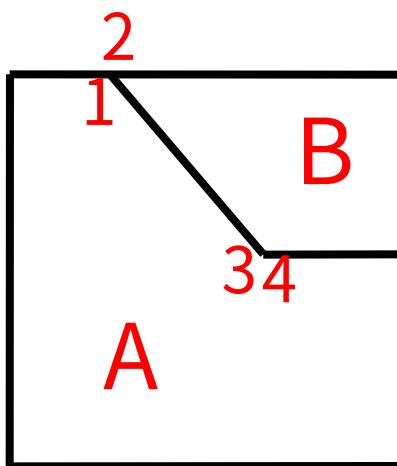
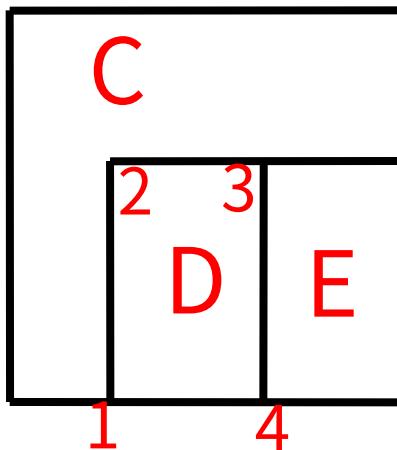


圖 13.61 點線面分析法 -3/9

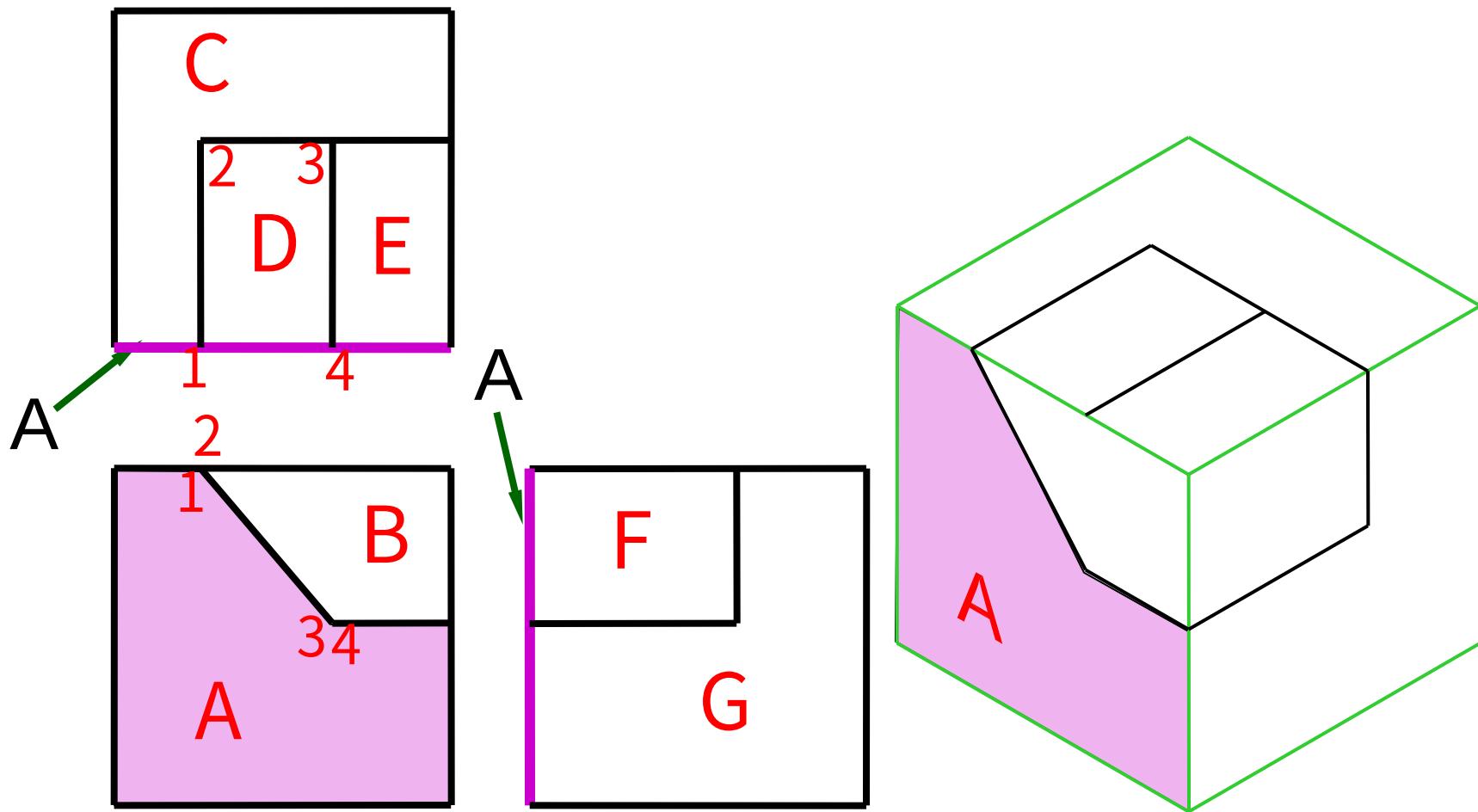


圖 13.61 點線面分析法 -4/9

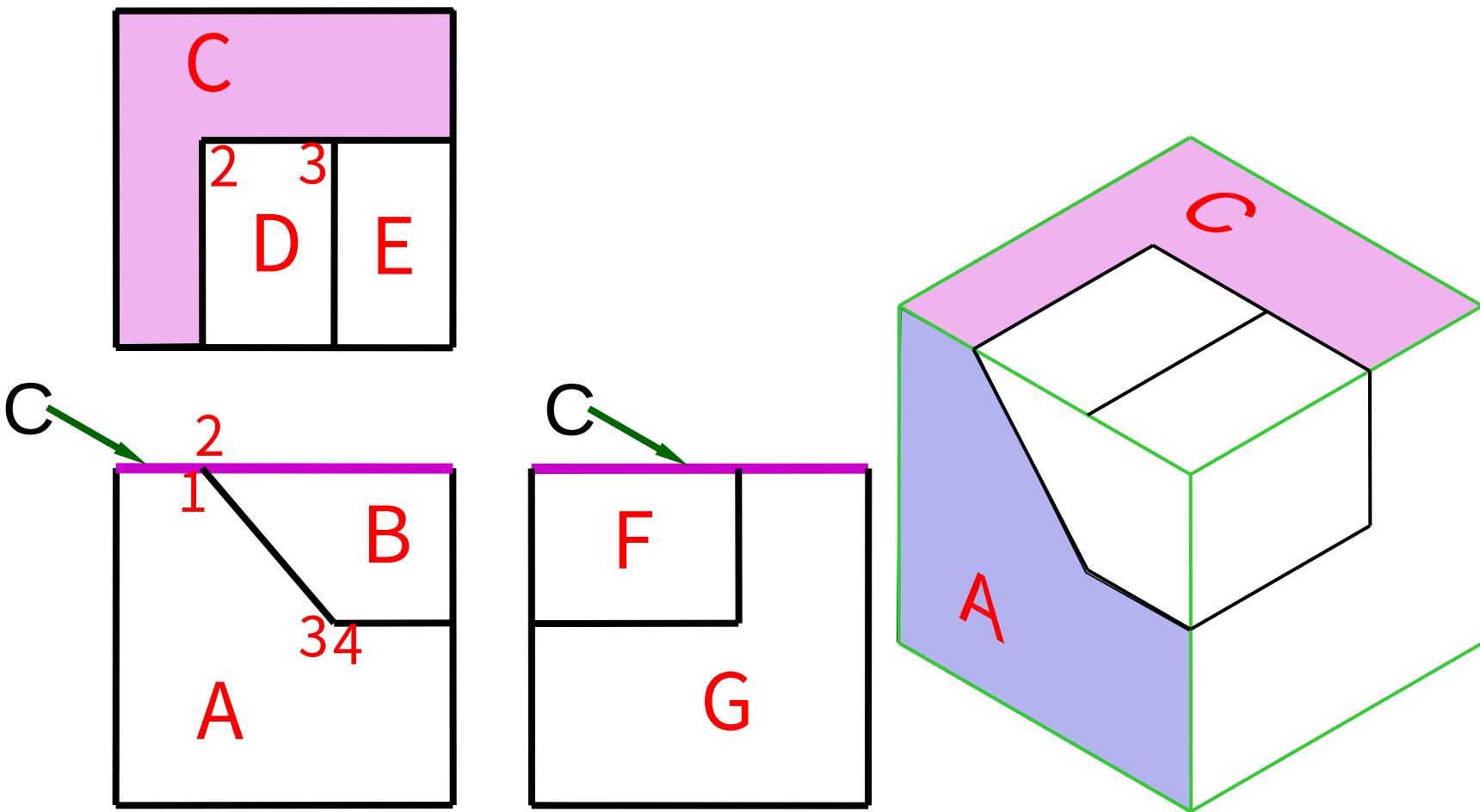


圖 13.61 點線面分析法 -5/9

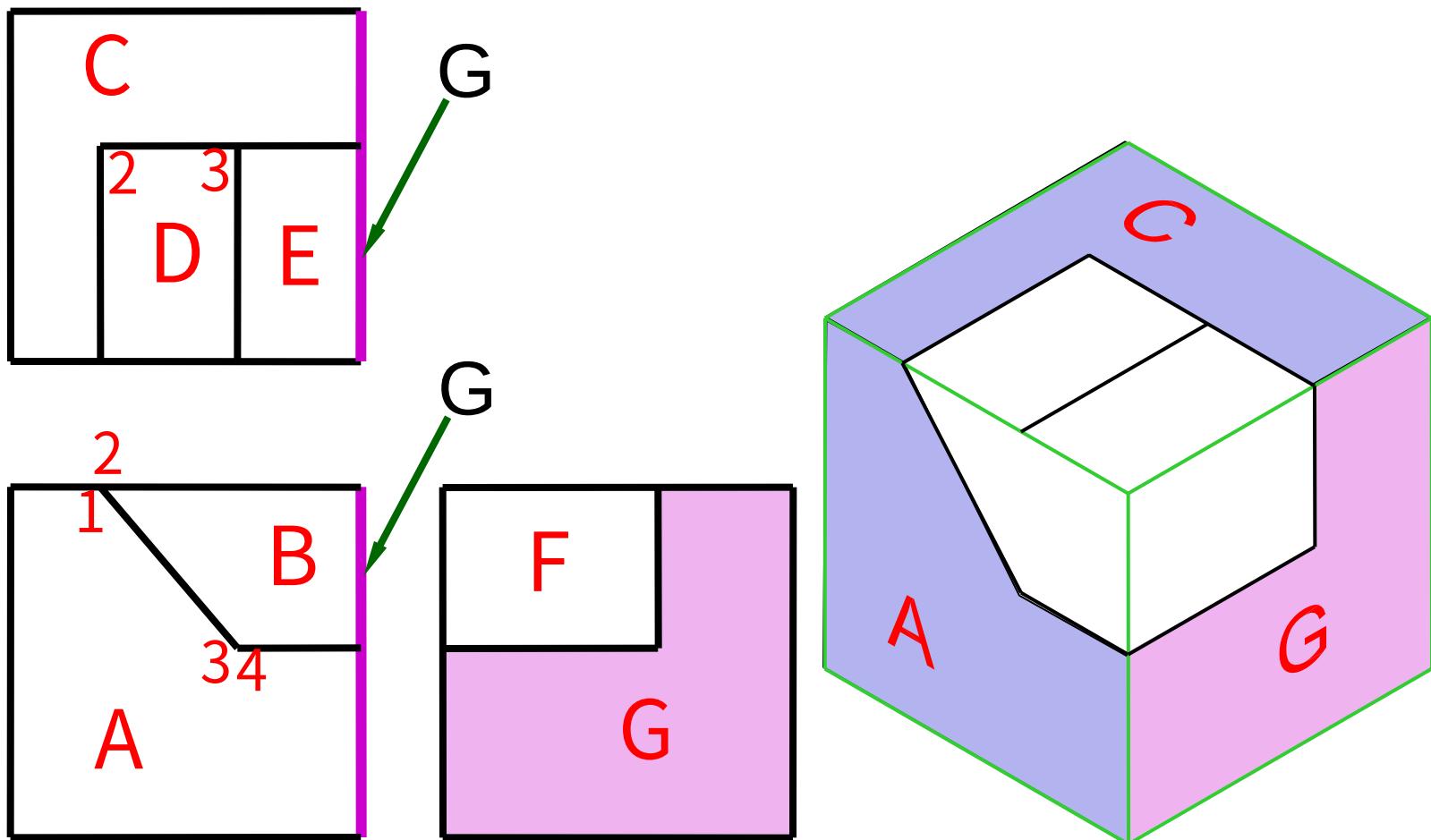


圖 13.61 點線面分析法 -6/9

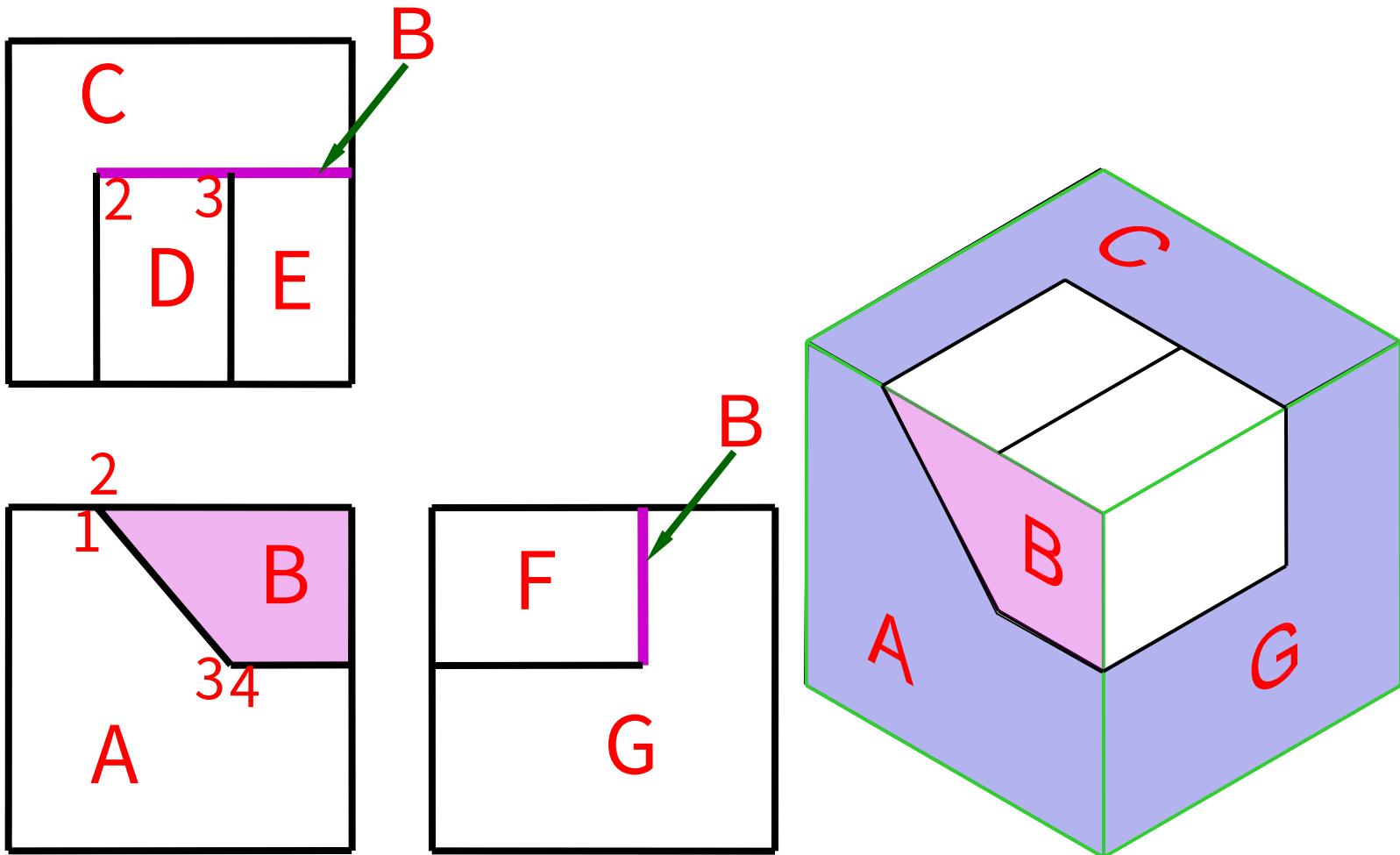


圖 13.61 點線面分析法 -7/9

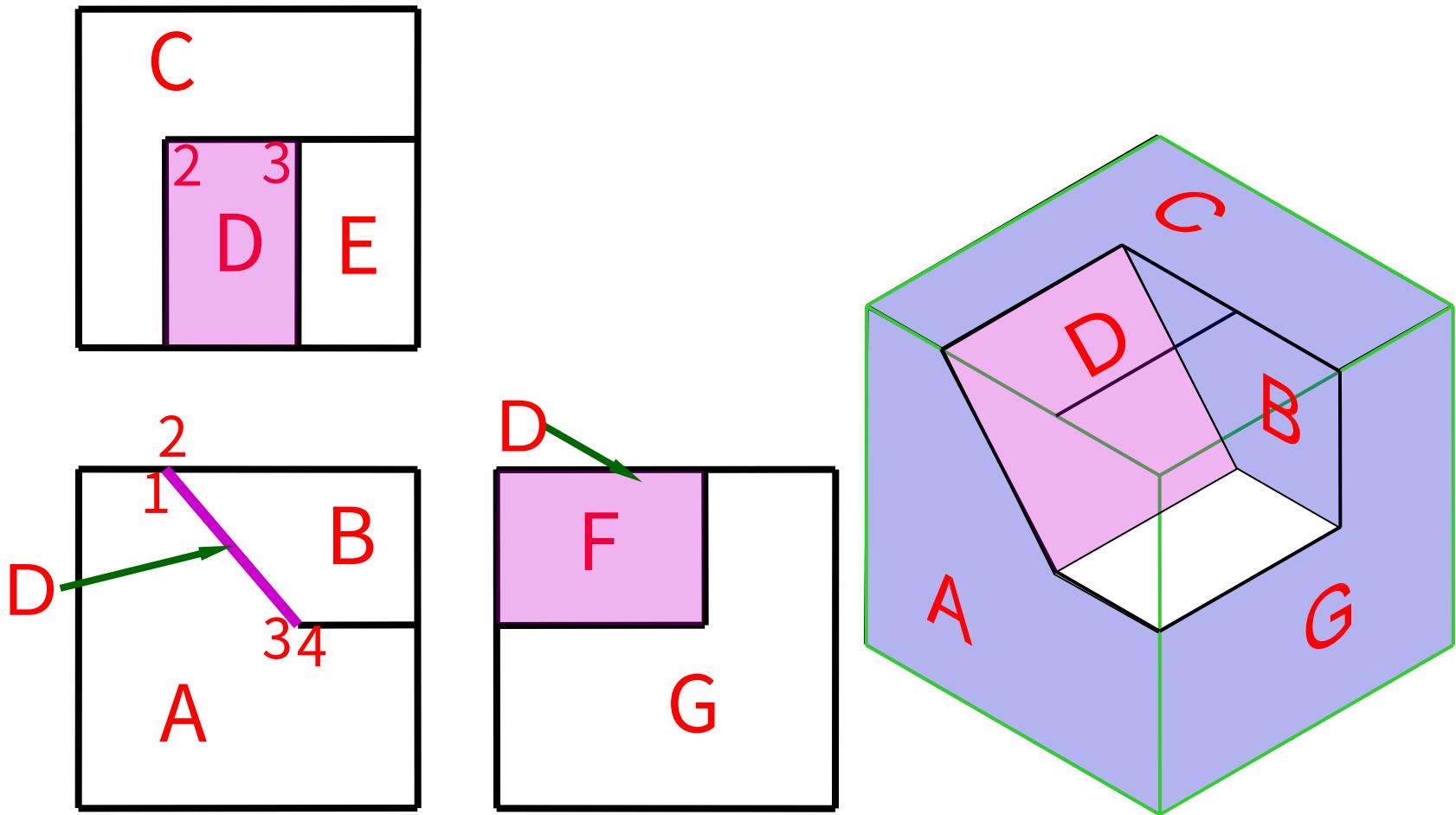


圖 13.61 點線面分析法 -8/9

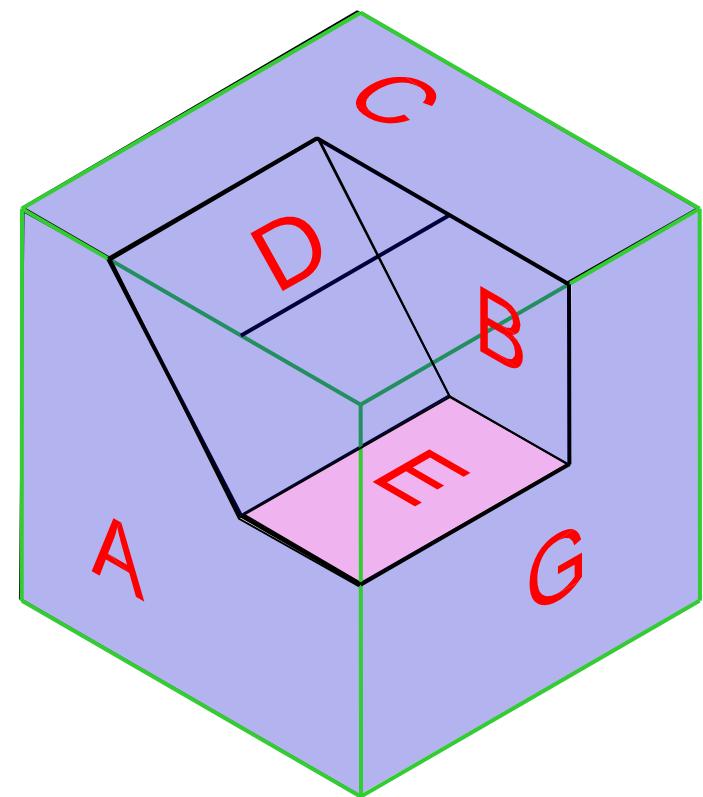
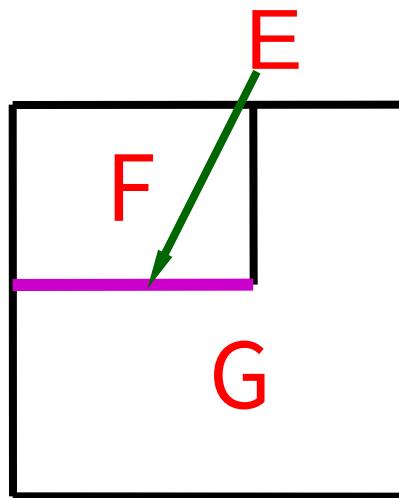
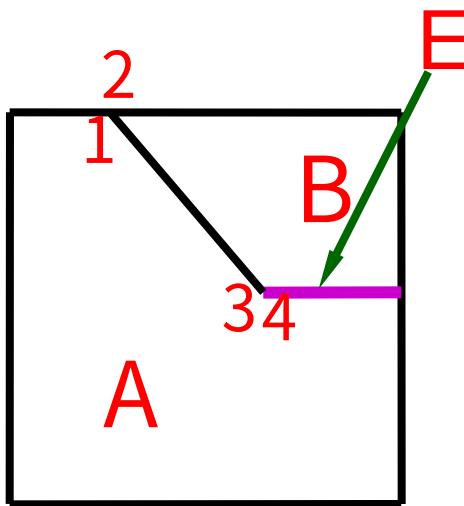
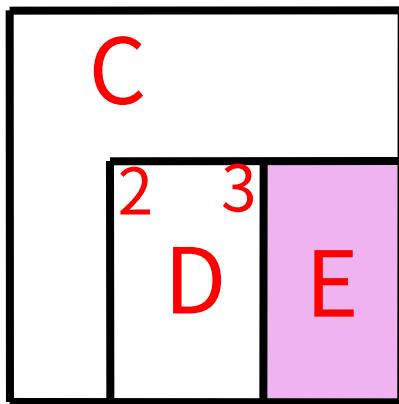
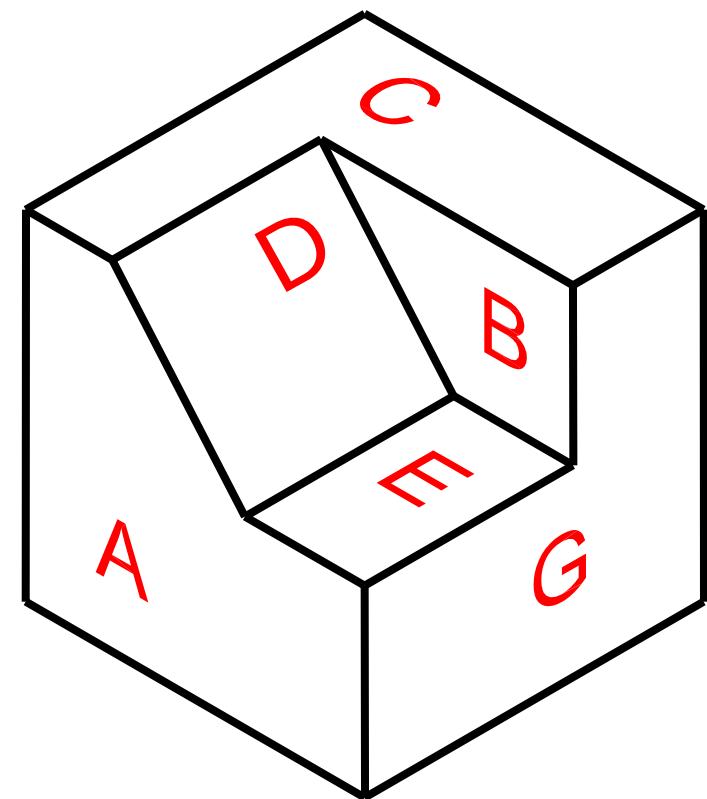
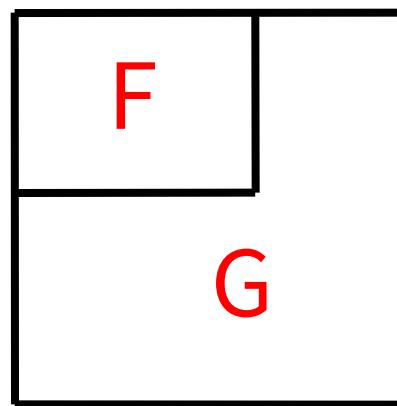
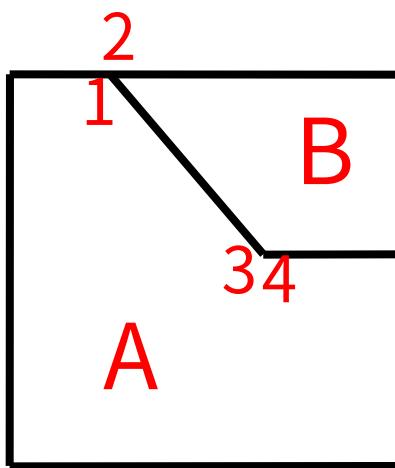
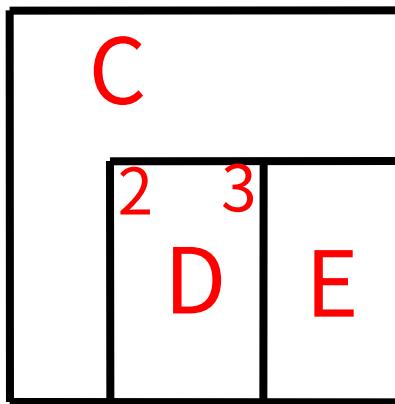
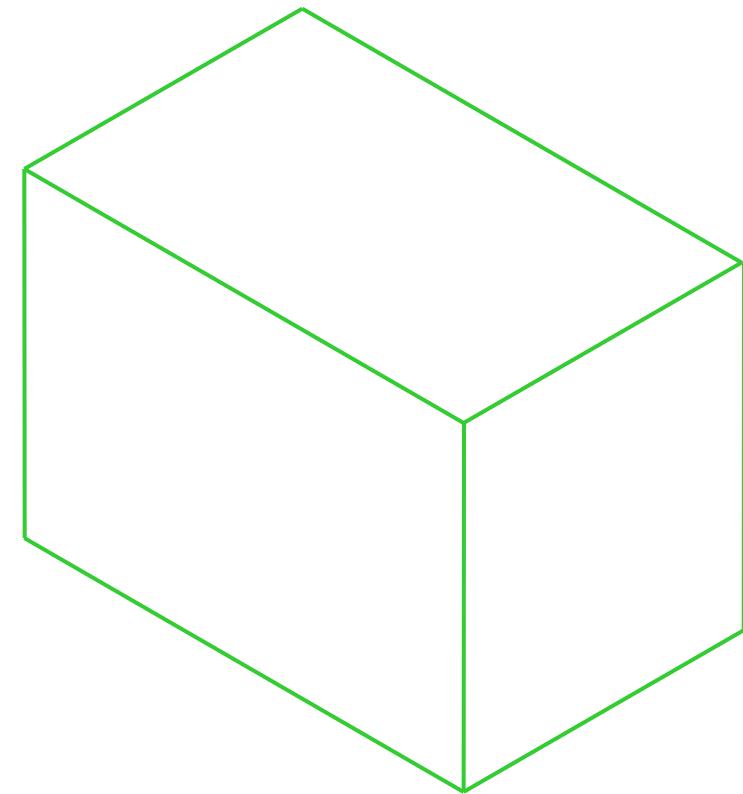
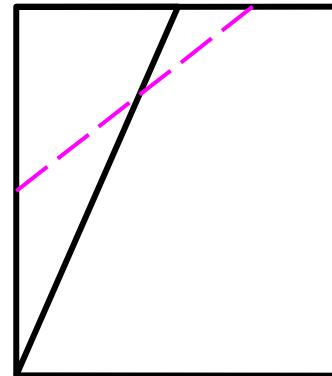
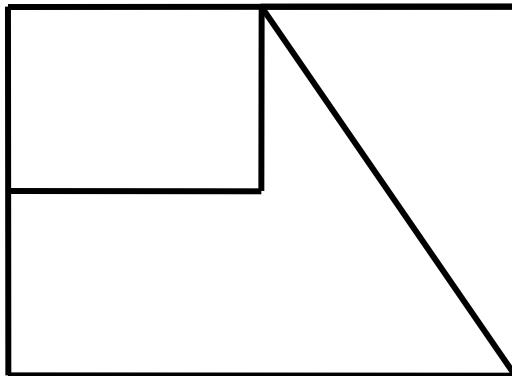
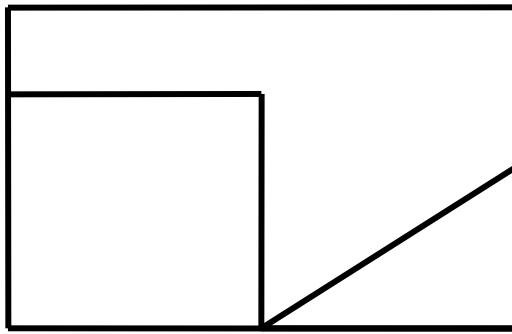


圖 13.61 點線面分析法 -9/9

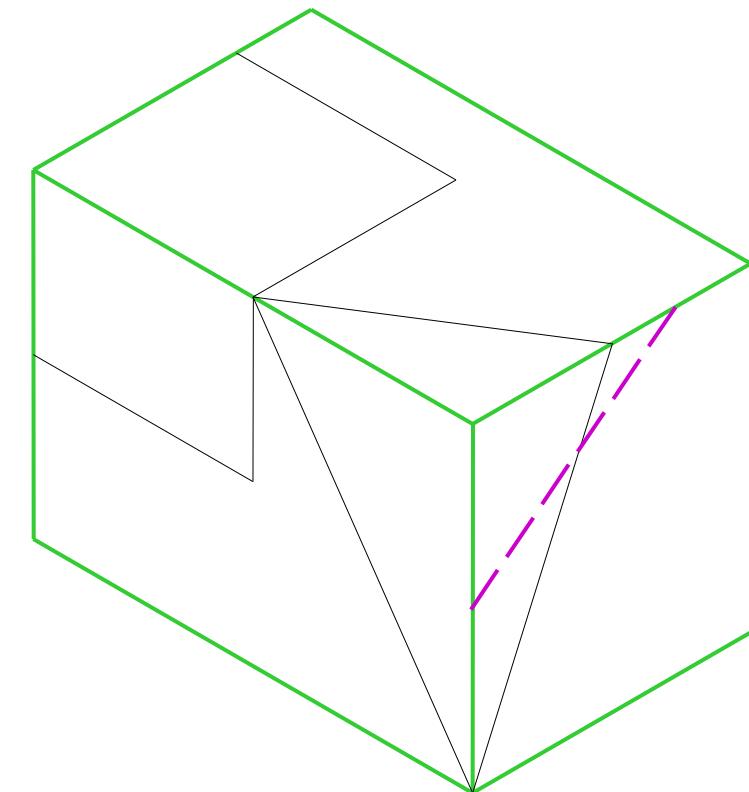
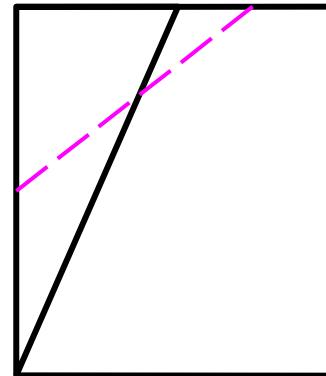
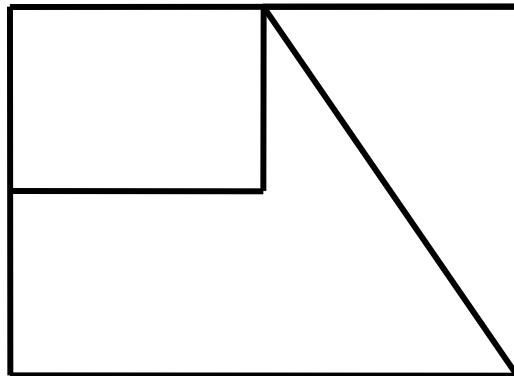
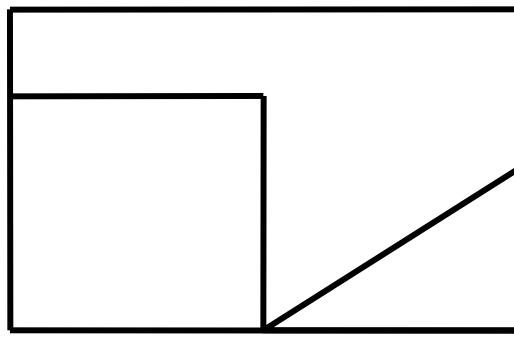


點線面分析法例題 -1/8



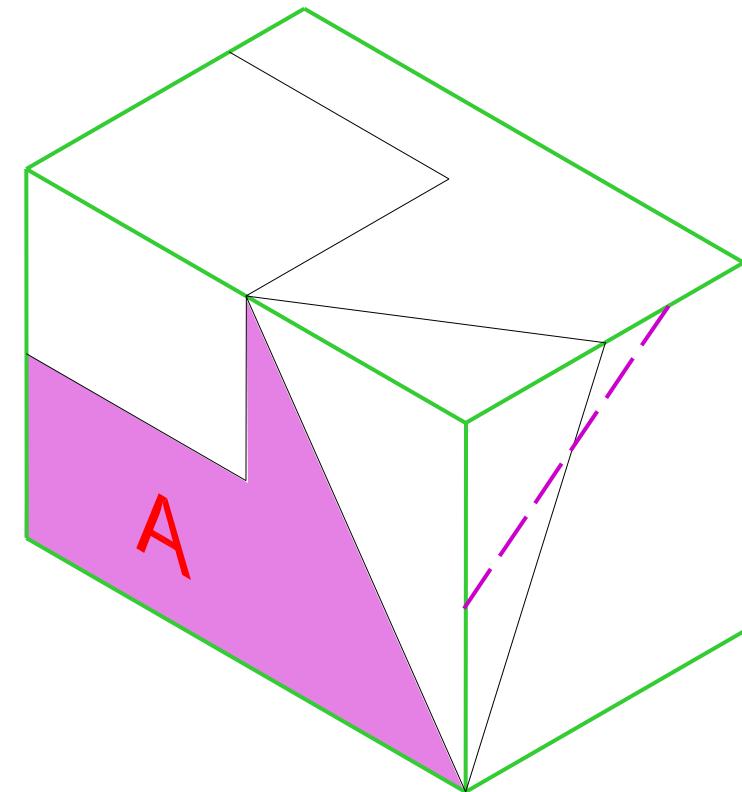
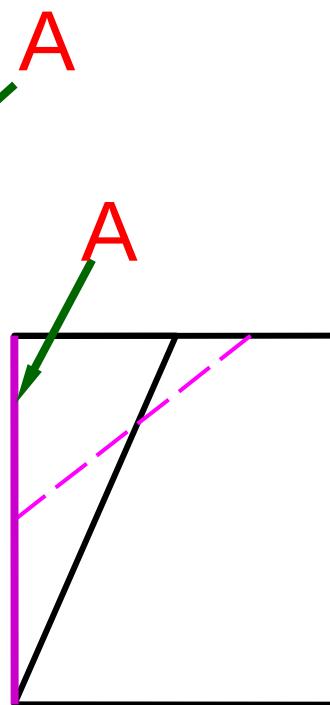
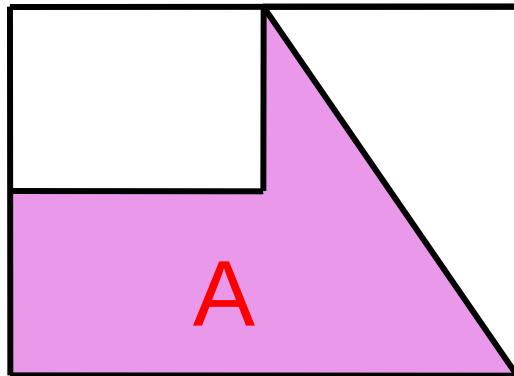
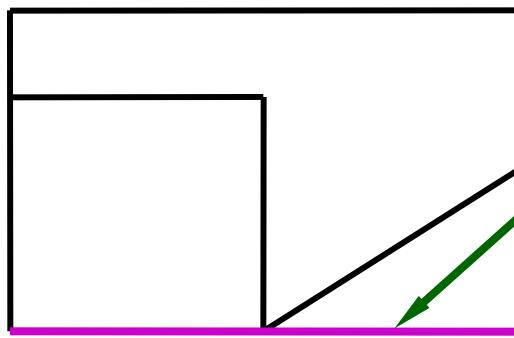
CAD 圖

點線面分析法例題 -2/8



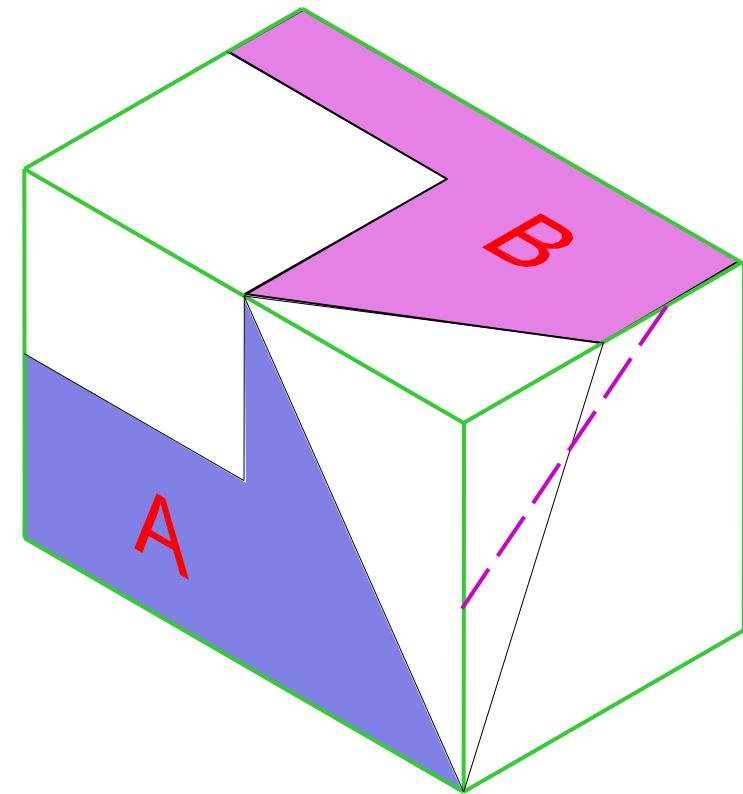
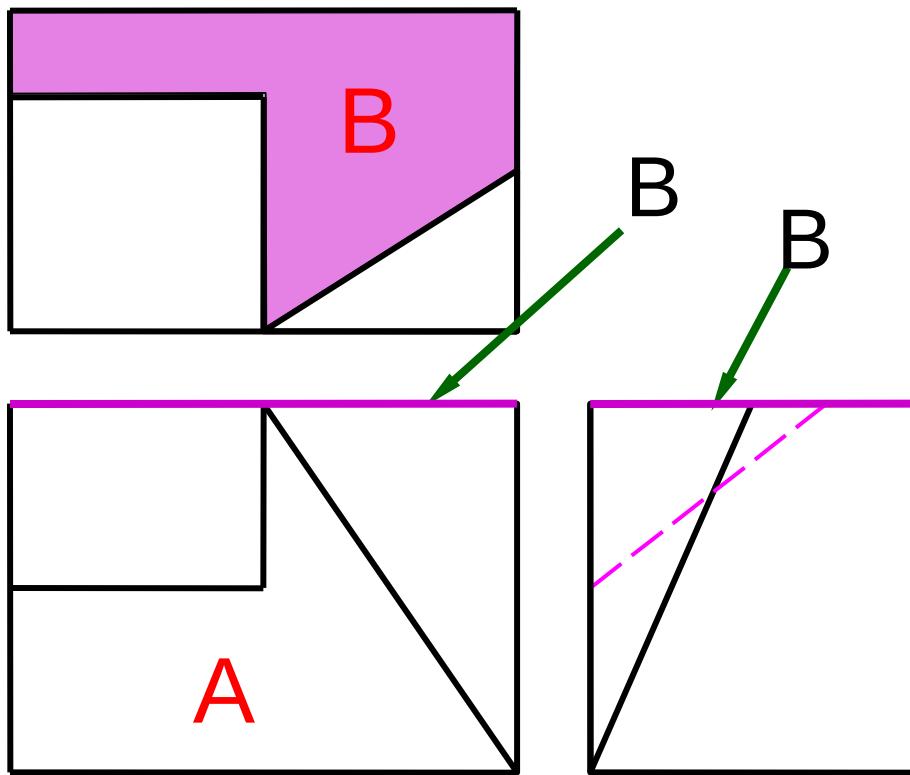
CAD 圖

點線面分析法例題 -3/8



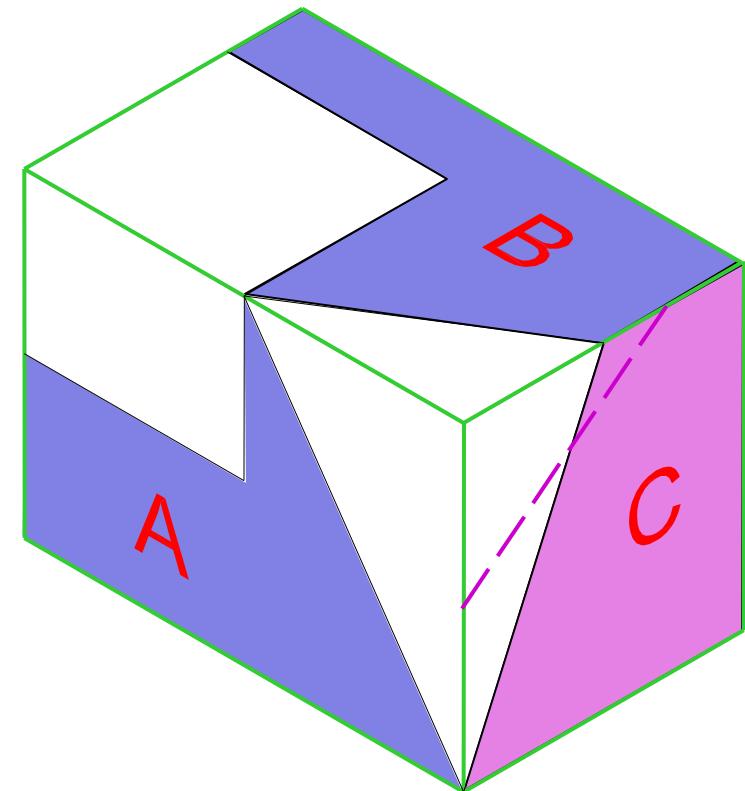
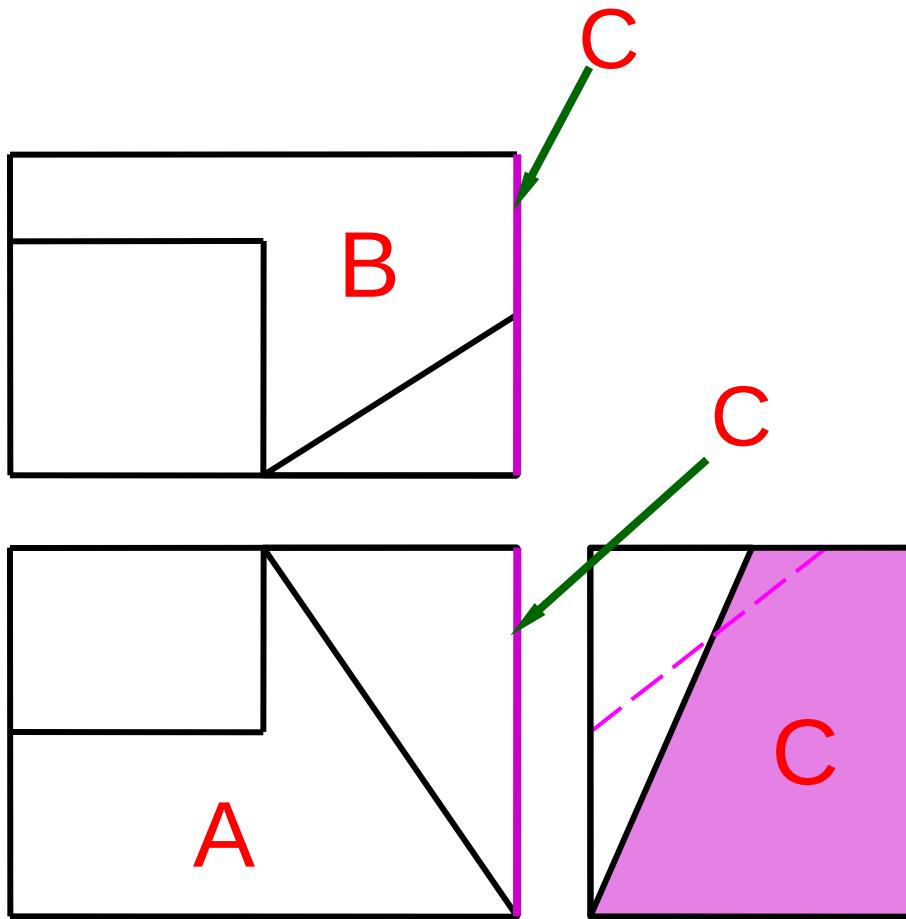
CAD 圖

點線面分析法例題 -4/8



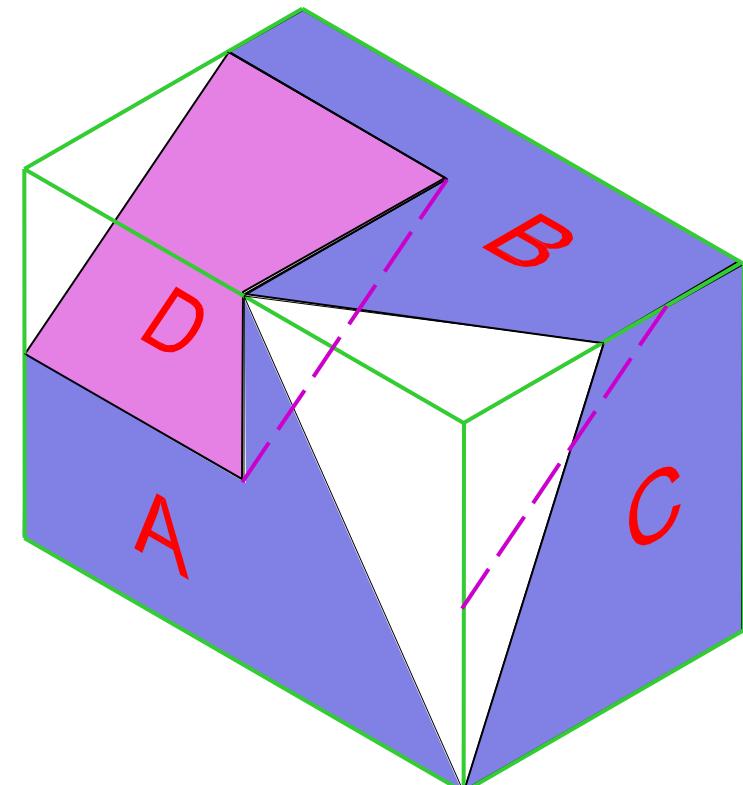
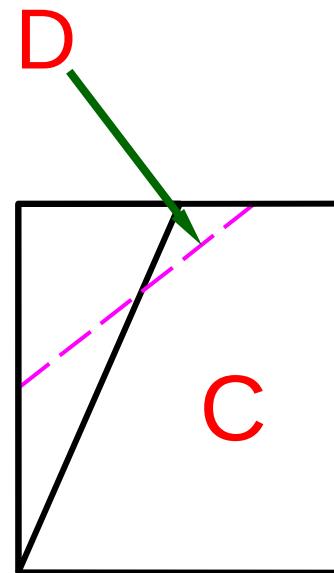
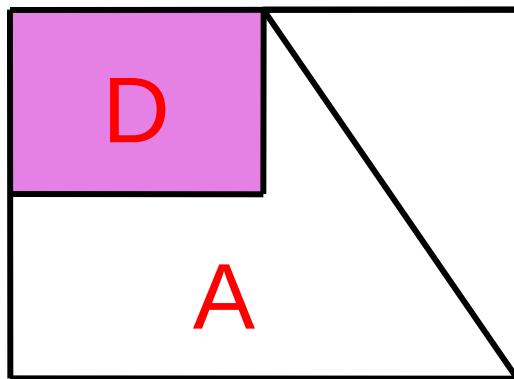
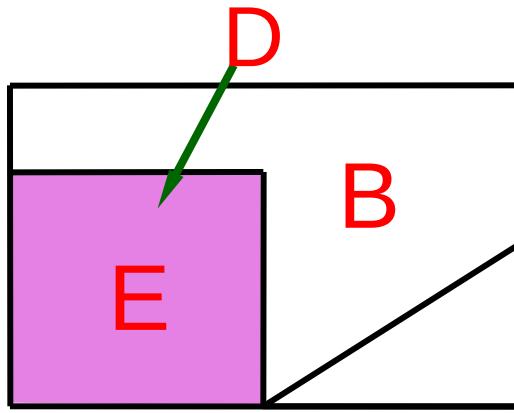
CAD 圖

點線面分析法例題 -5/8



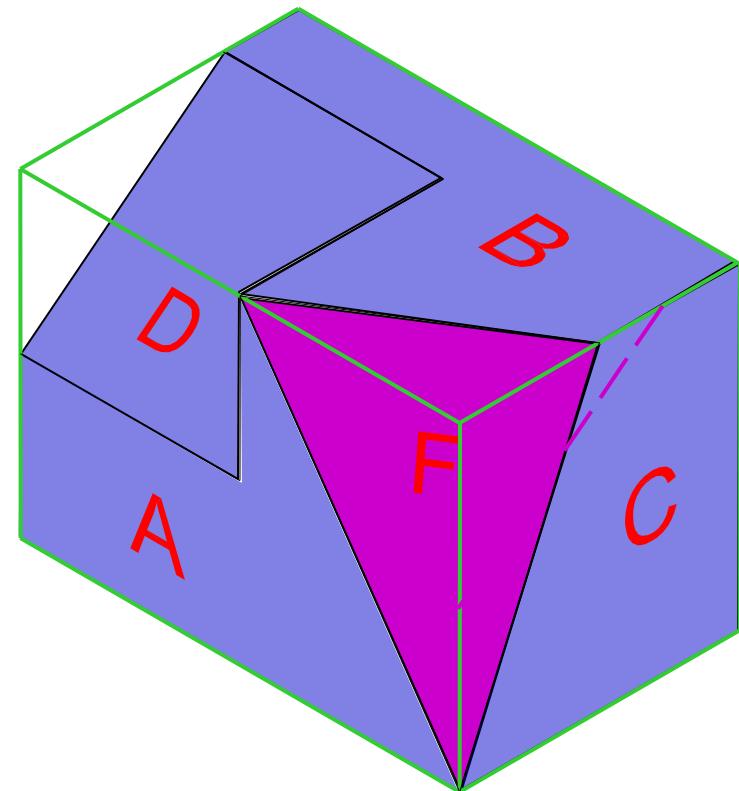
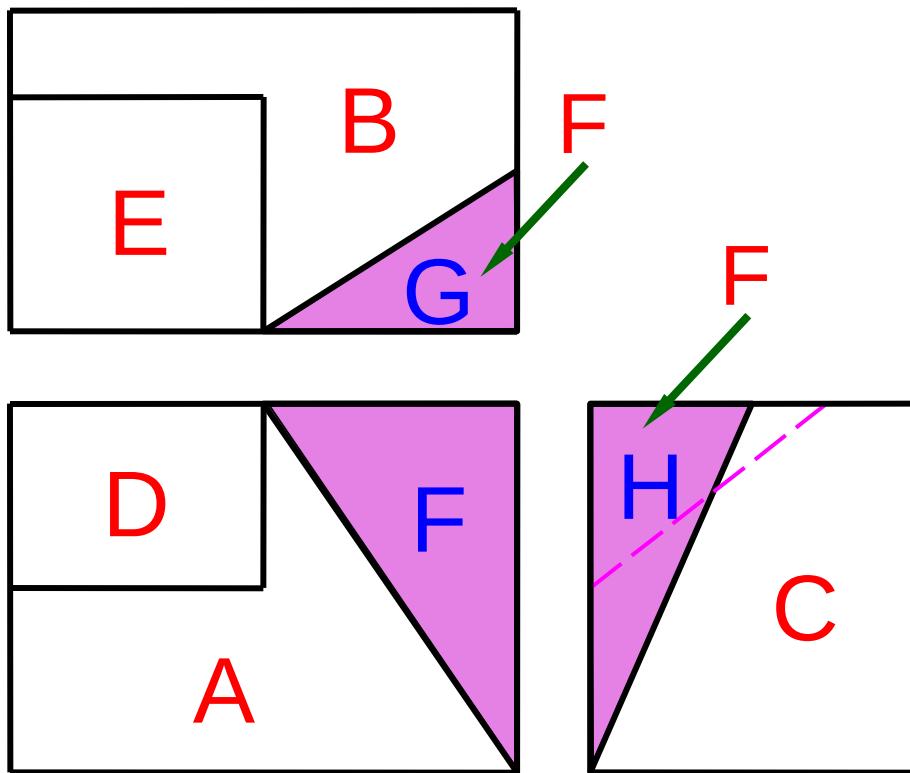
CAD 圖

點線面分析法例題 -6/8



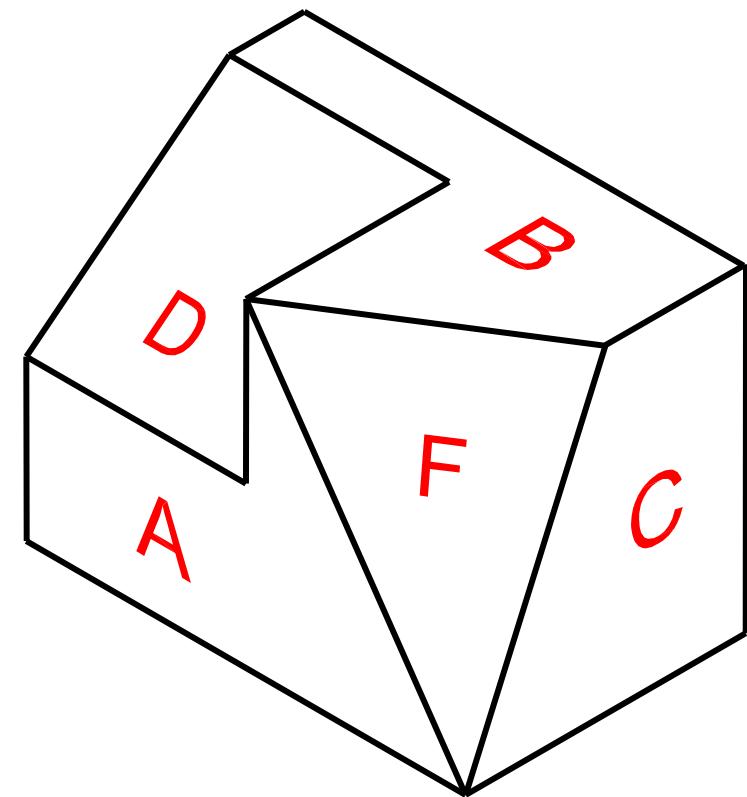
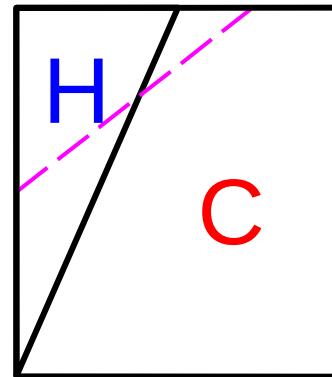
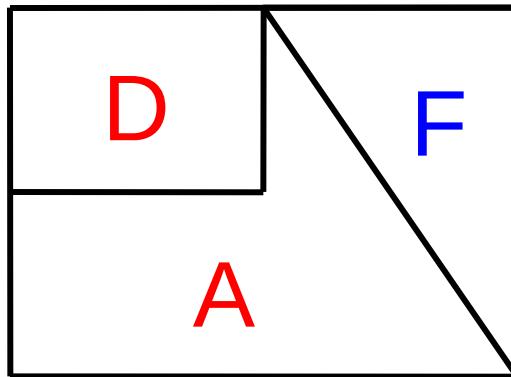
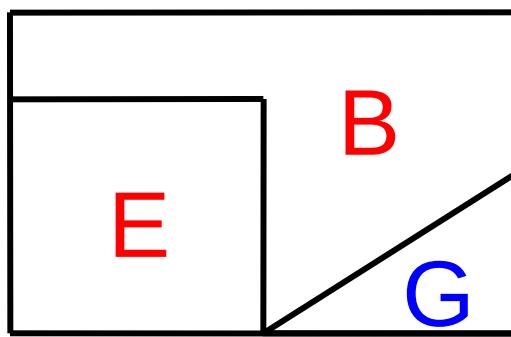
CAD 圖

點線面分析法例題 -7/8



CAD 圖

點線面分析法例題 -8/8



CAD 圖