

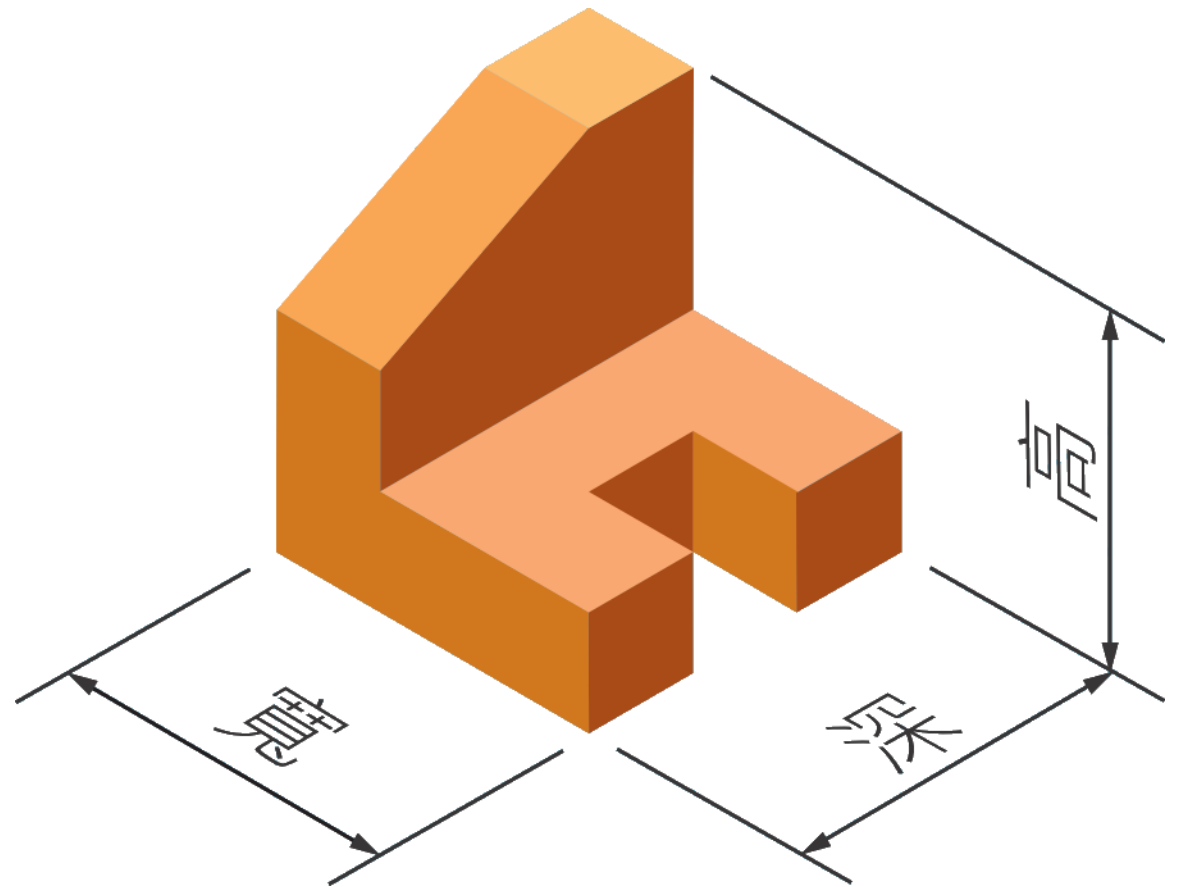
# 1. 立體圖

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# 立體圖的特性

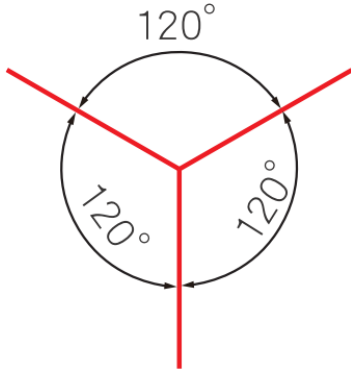
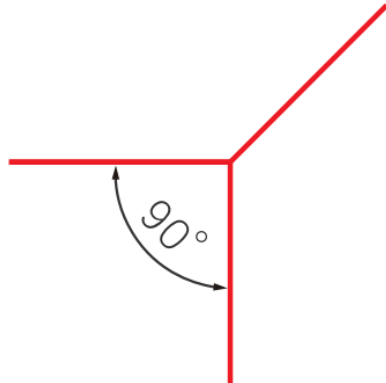
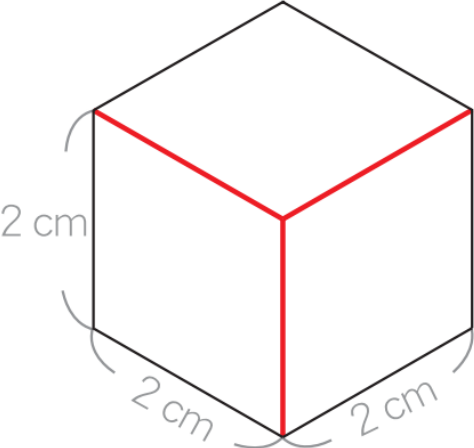
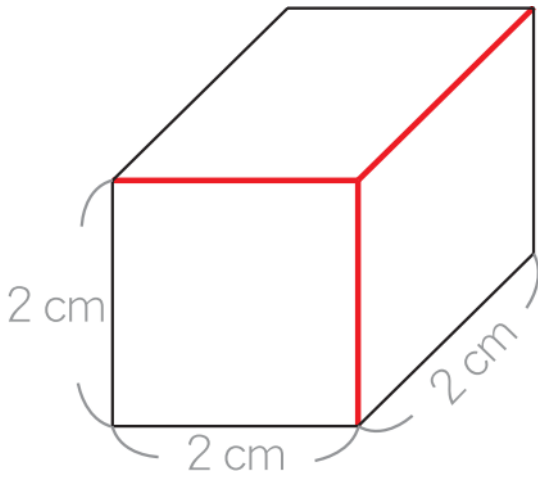


- 強調物體的外形
- 呈現立體感
- 表現出**寬度**、**高度**、**深度**



# 立體圖的種類

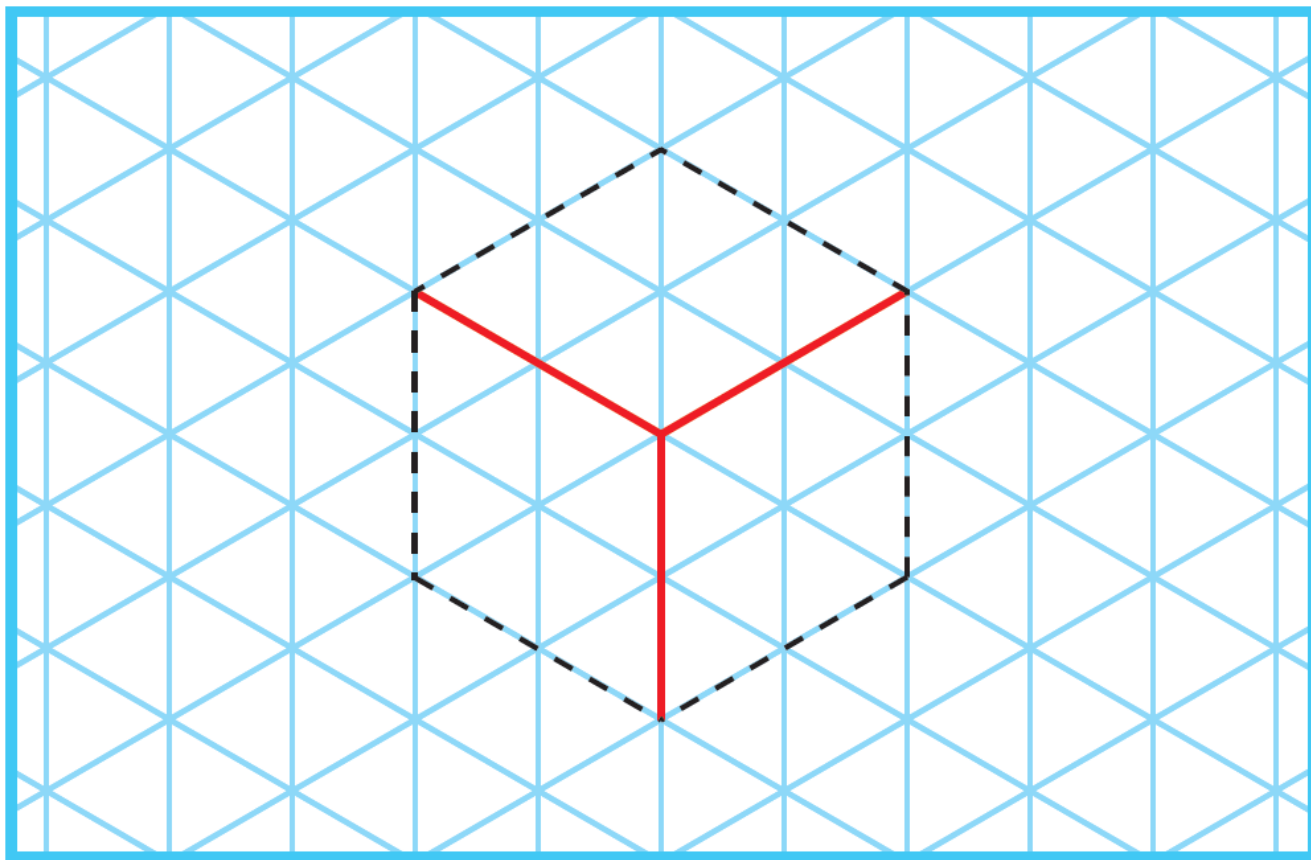


	等角圖	等斜圖
三軸特徵	三軸夾角互為120 度 	有兩軸呈90 度 
圖例		

# 繪製等角圖



- 利用**方盒法**來繪製等角圖。

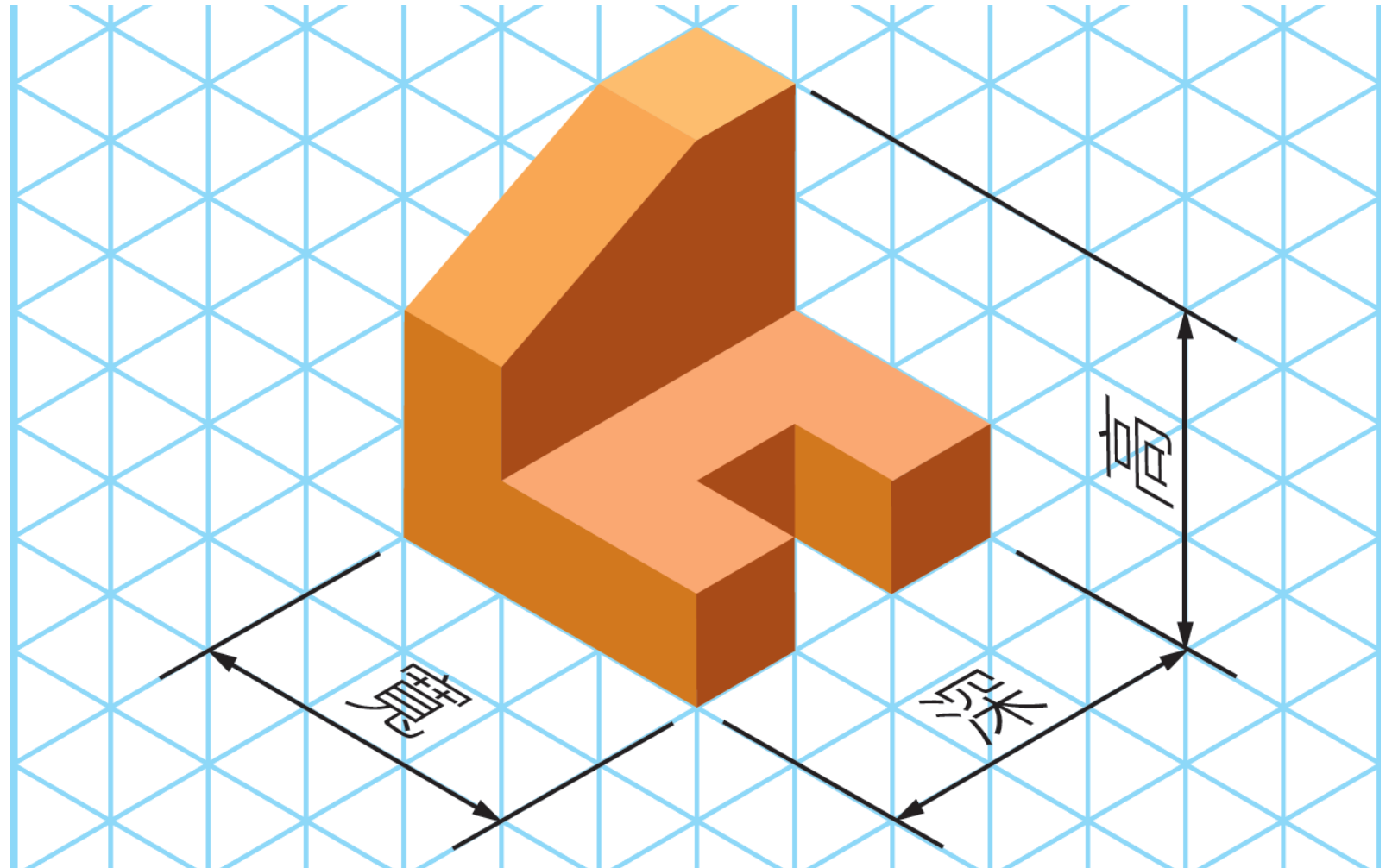


※三角格紙內每個格子都是**正三角形**，可以輕易定出夾角120度的三軸。

# 繪製等角圖



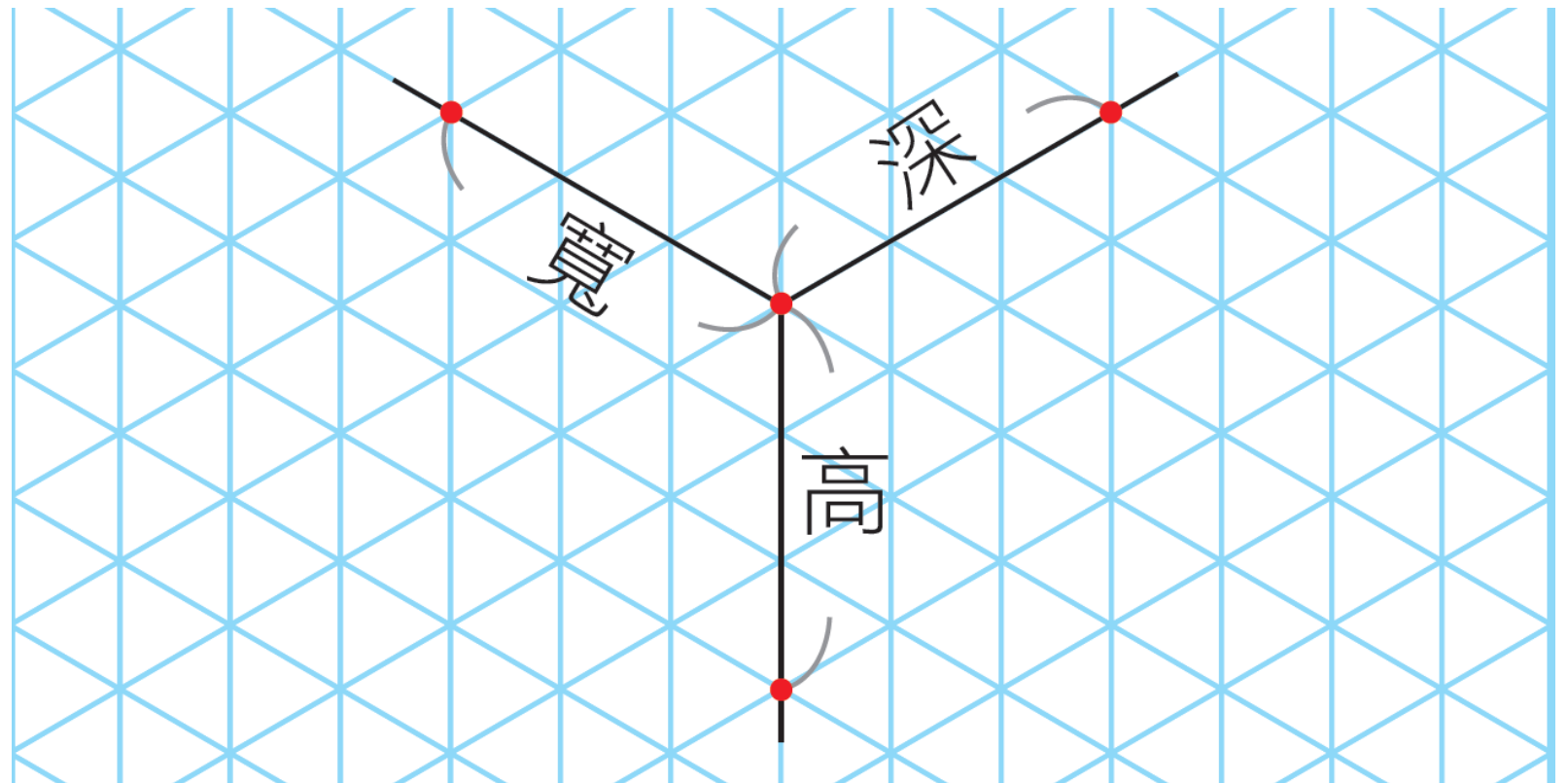
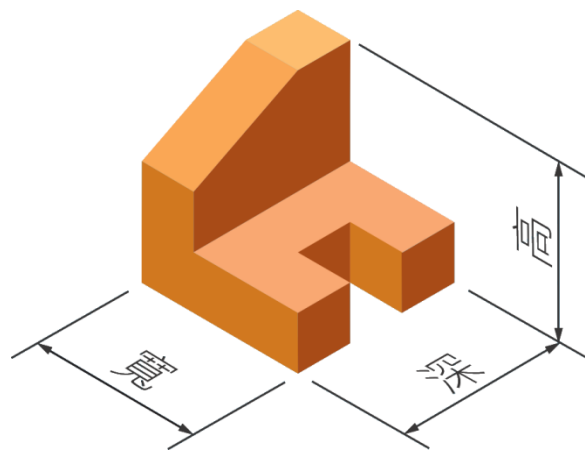
A、找出圖中物體的寬、高、深。



# 繪製等角圖



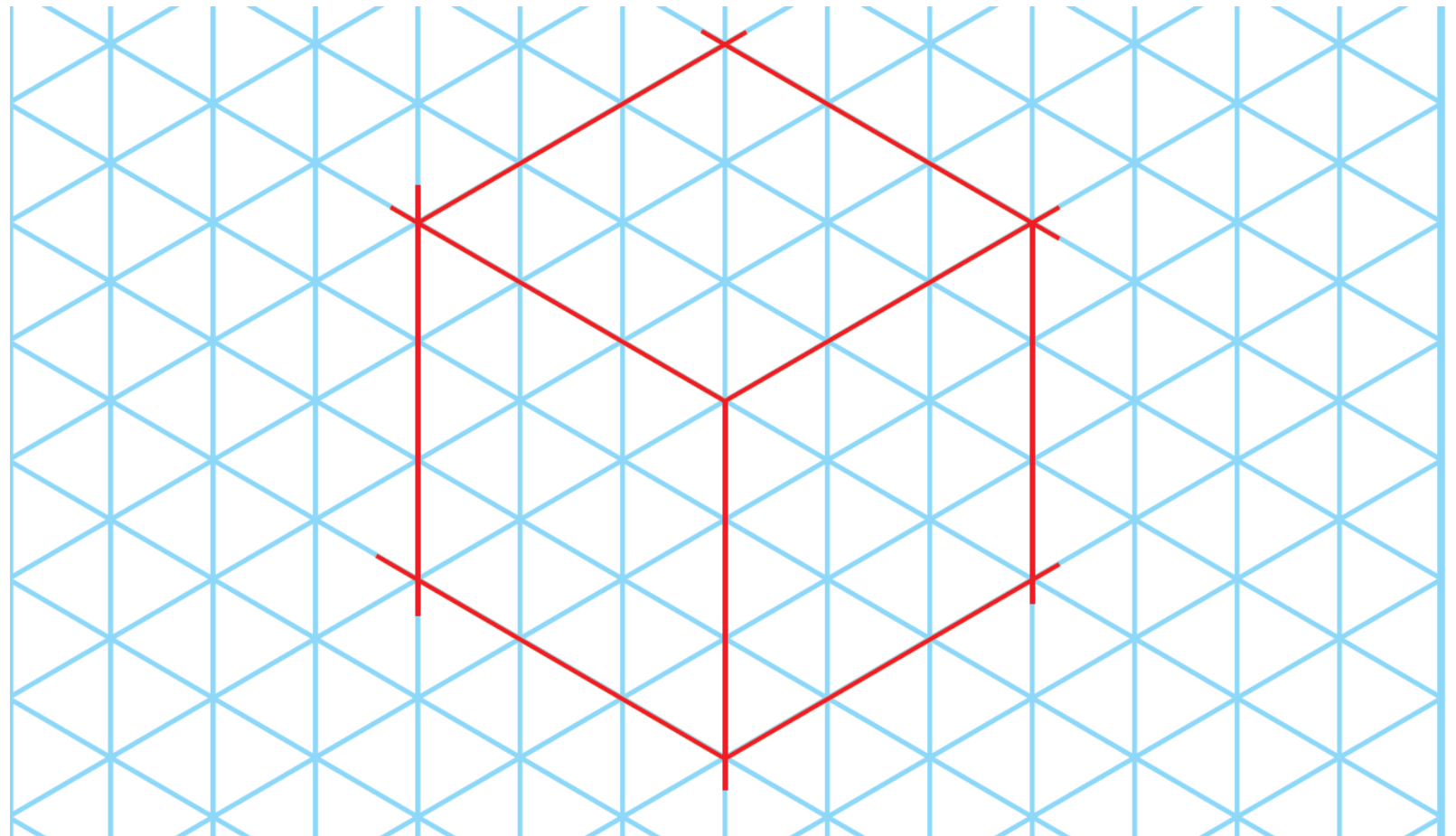
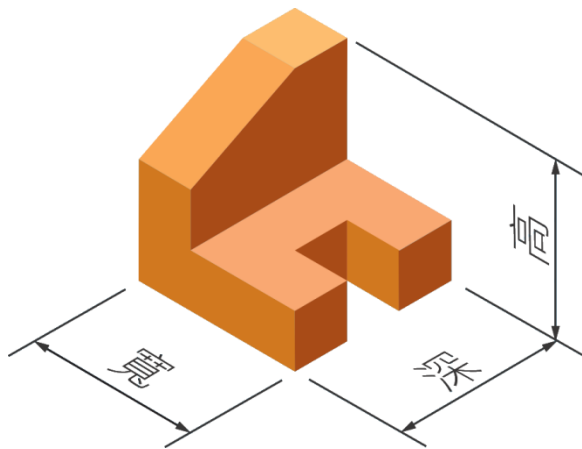
B、畫出夾角為120度的等角軸，並依照物體的尺寸，標出寬、高、深端點記號。



# 繪製等角圖



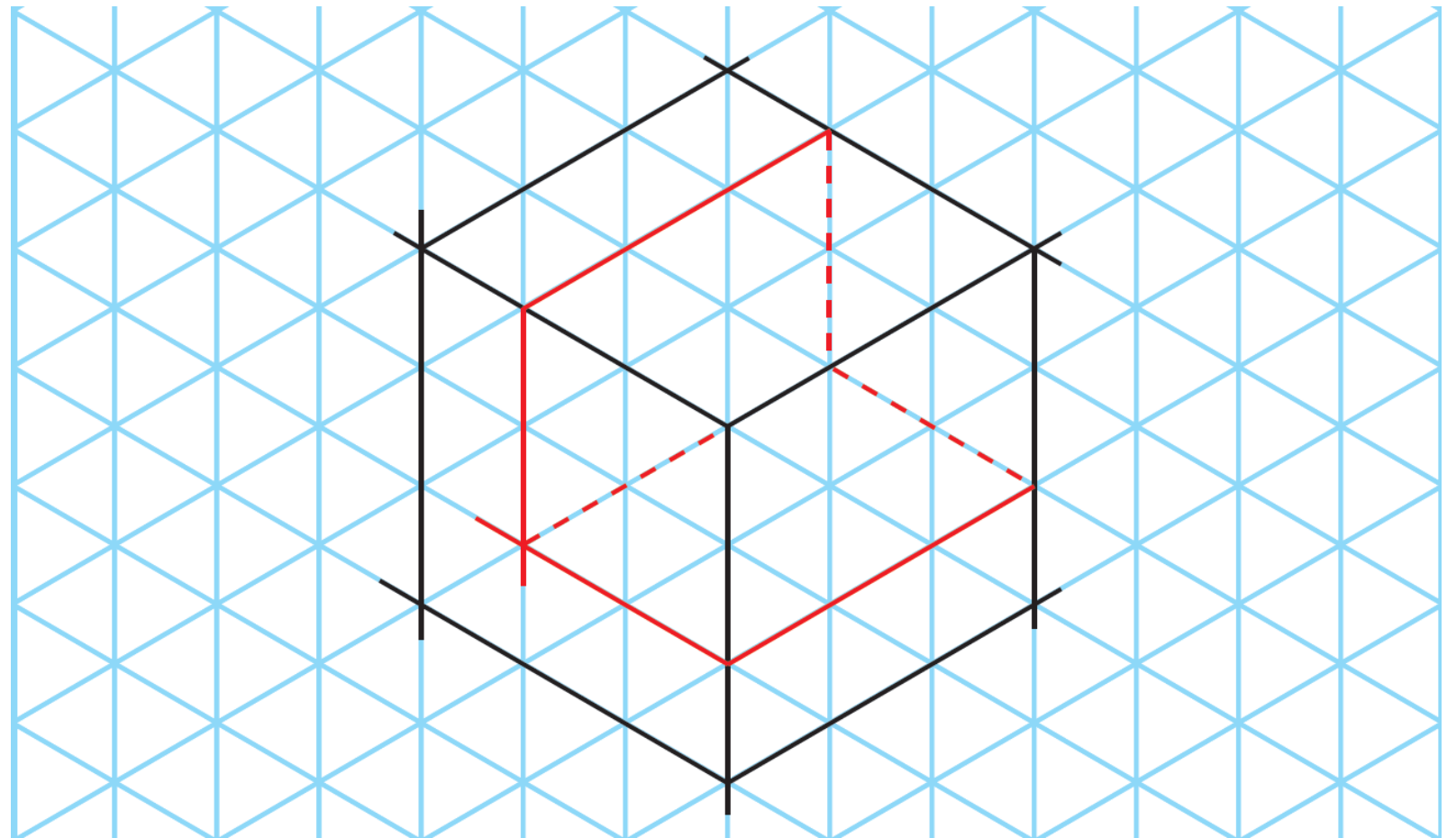
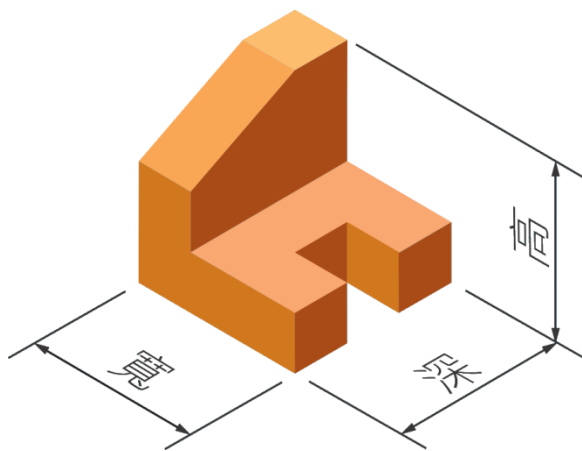
C、自各端點畫出平行各軸的線，即完成方盒，作為後續繪製細部線條的參考基準。



# 繪製等角圖



D、在等角軸或與等角軸平行的等角線上，依物體尺度繪製輔助線。

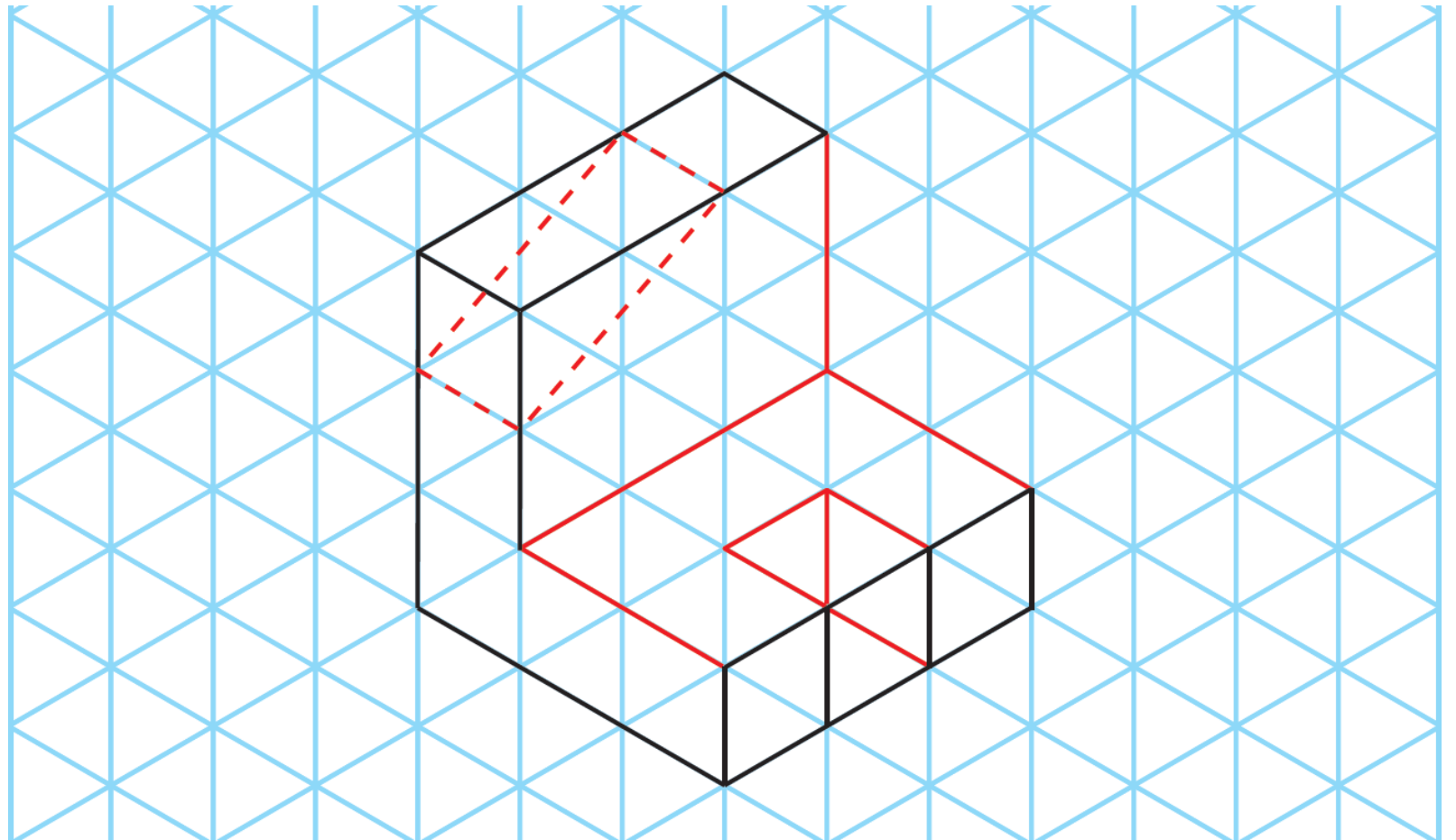
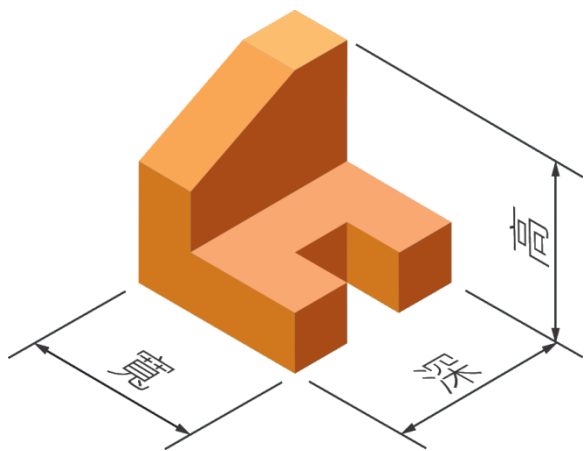




# 繪製等角圖



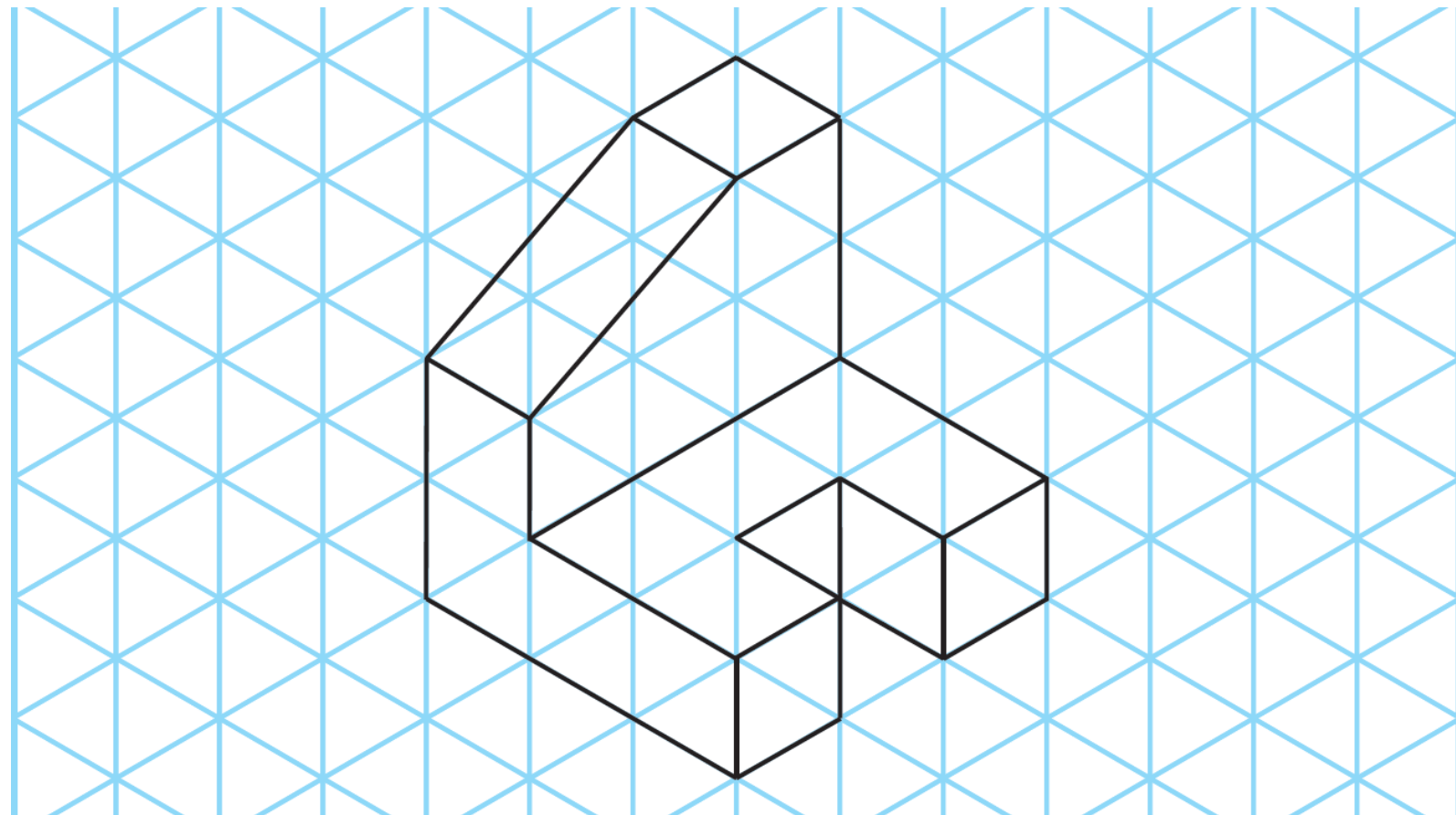
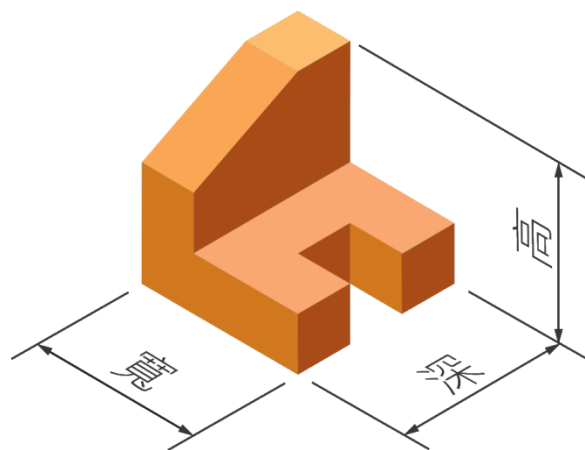
E、由大到小，逐步畫出物體各部位的輪廓。



# 繪製等角圖



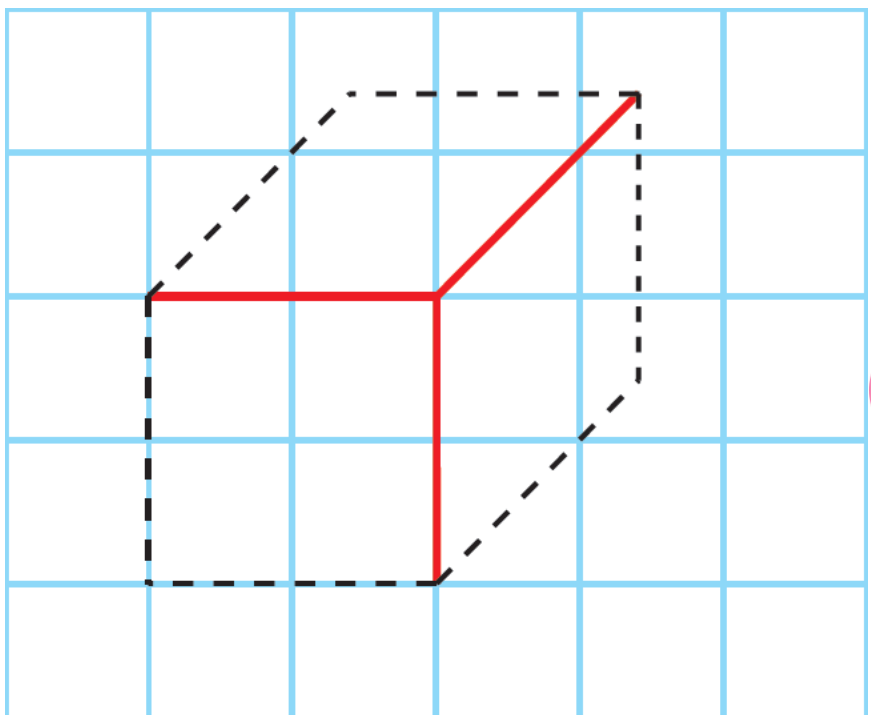
F、擦掉多餘的線條，完成等角圖。



# 繪製等斜圖



- 利用**方盒法**來繪製等斜圖。



- ※方格紙中，每個方格都是正方形。
- ※直、橫線可直接繪製高和寬。
- ※對角線可當45度斜軸，表現深度。

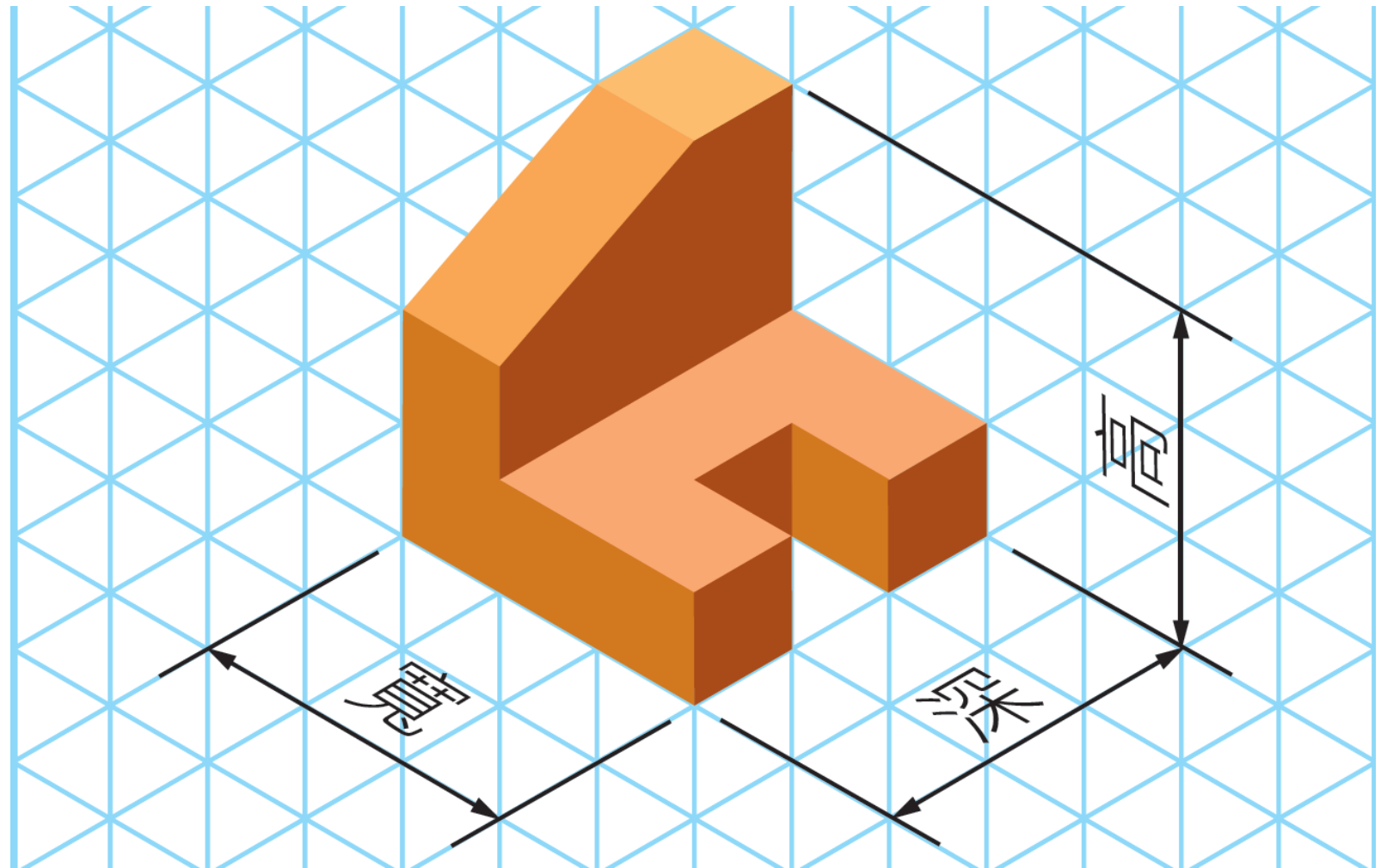


繪製深度時，必須於斜軸上以尺測量長度，其位置不一定會與方格的格線重合。例如：左圖為邊長1 cm的正立方體等斜圖，其深度的端點即不在格線上。

# 繪製等斜圖



A、找出圖中物體的高、寬、深。

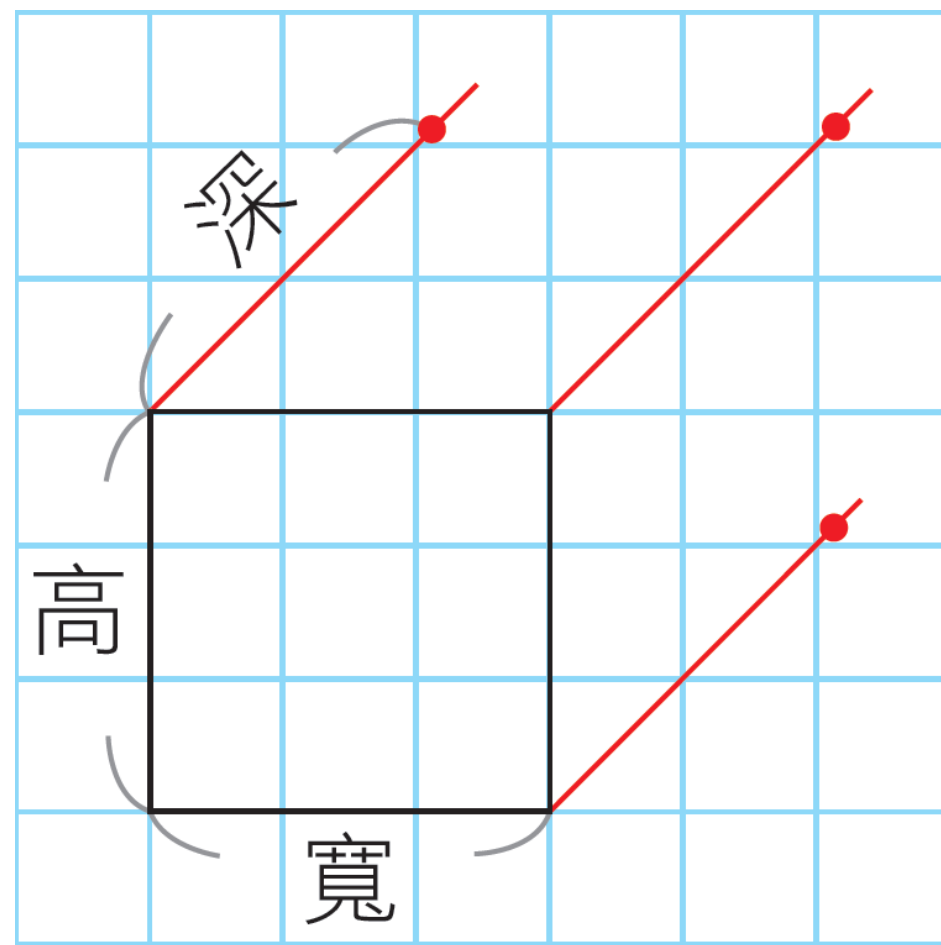
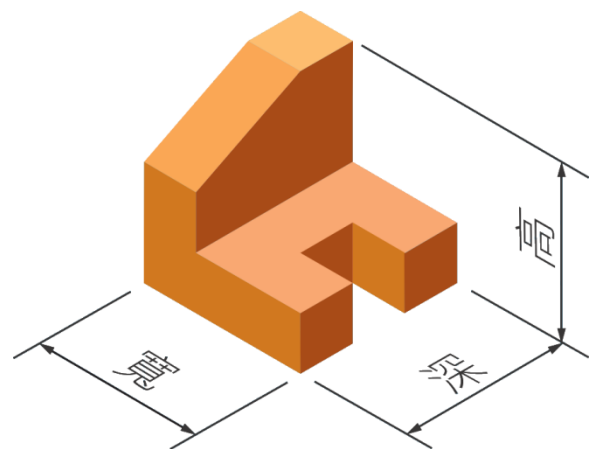


# 繪製等斜圖



B、(1) 以物體的高、寬，繪出方盒正面。

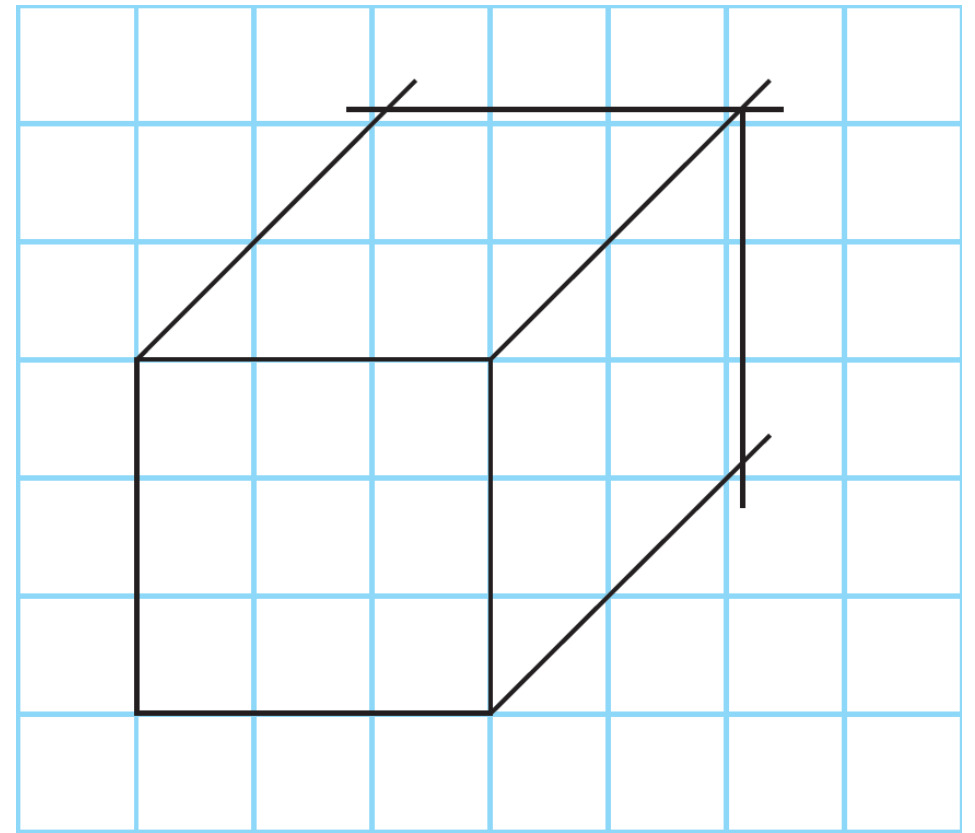
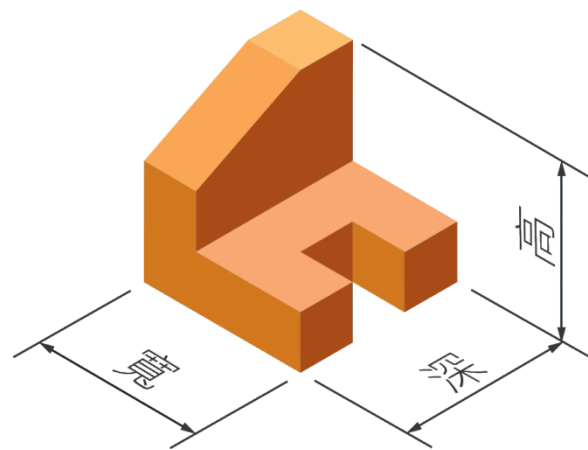
(2) 由方形的端點延伸出45度的斜軸，並在斜軸上以尺測量出物體的深度，作出標記。



# 繪製等斜圖



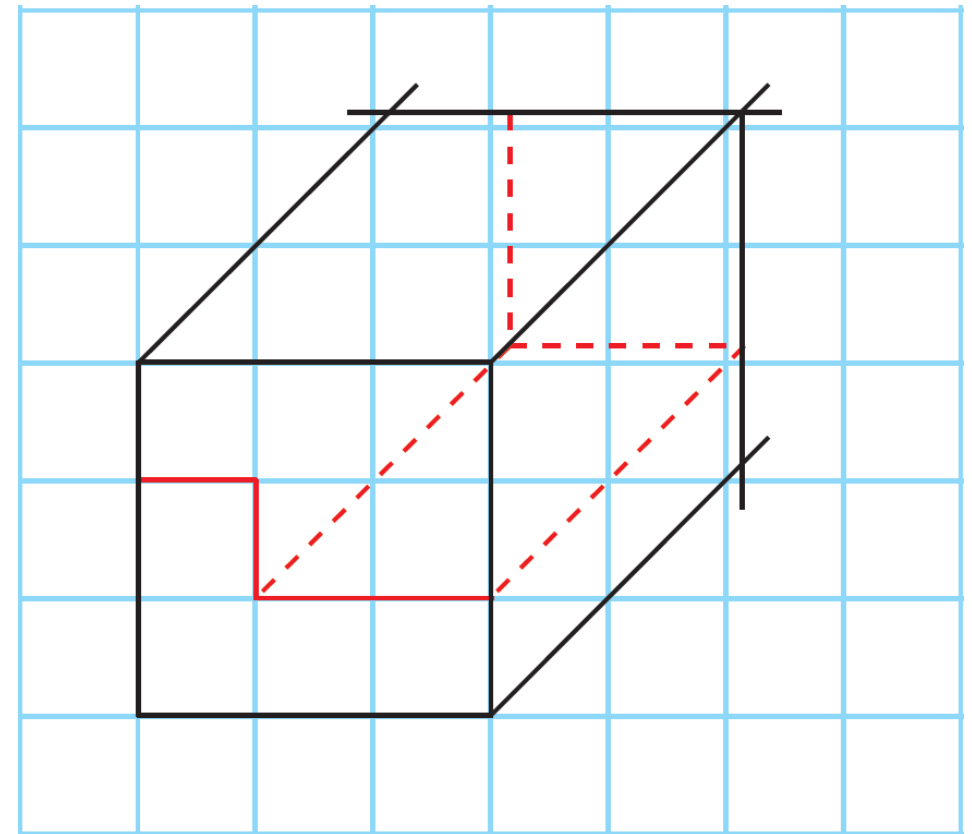
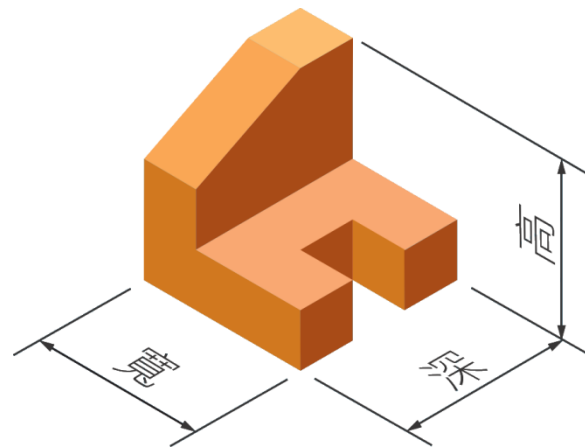
C、將各標記連接，形成方盒。



# 繪製等斜圖



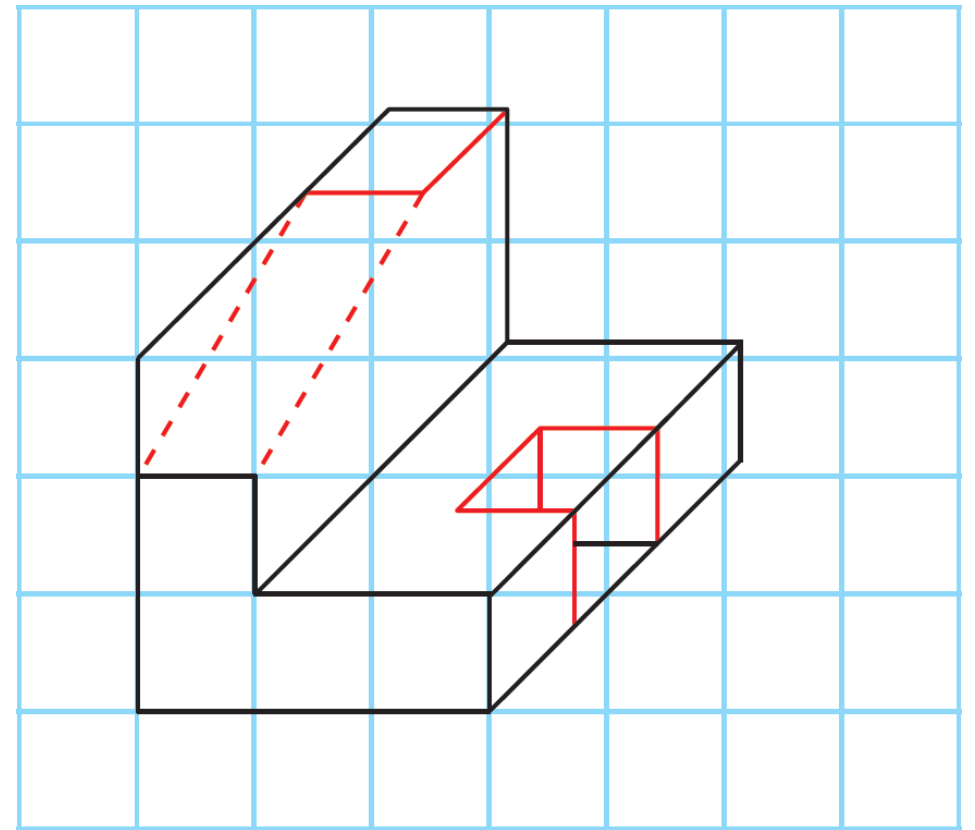
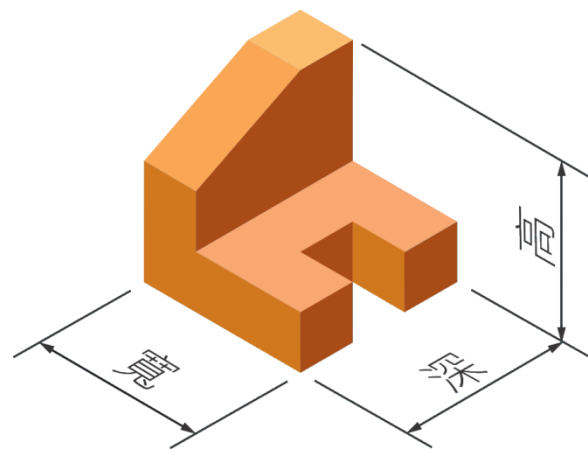
D、在方盒上，由正面開始標示各輪廓線長，再畫出各轉折點對軸的平行線。



# 繪製等斜圖



E、逐步擦去多餘的線條，並繪製細部輪廓線。

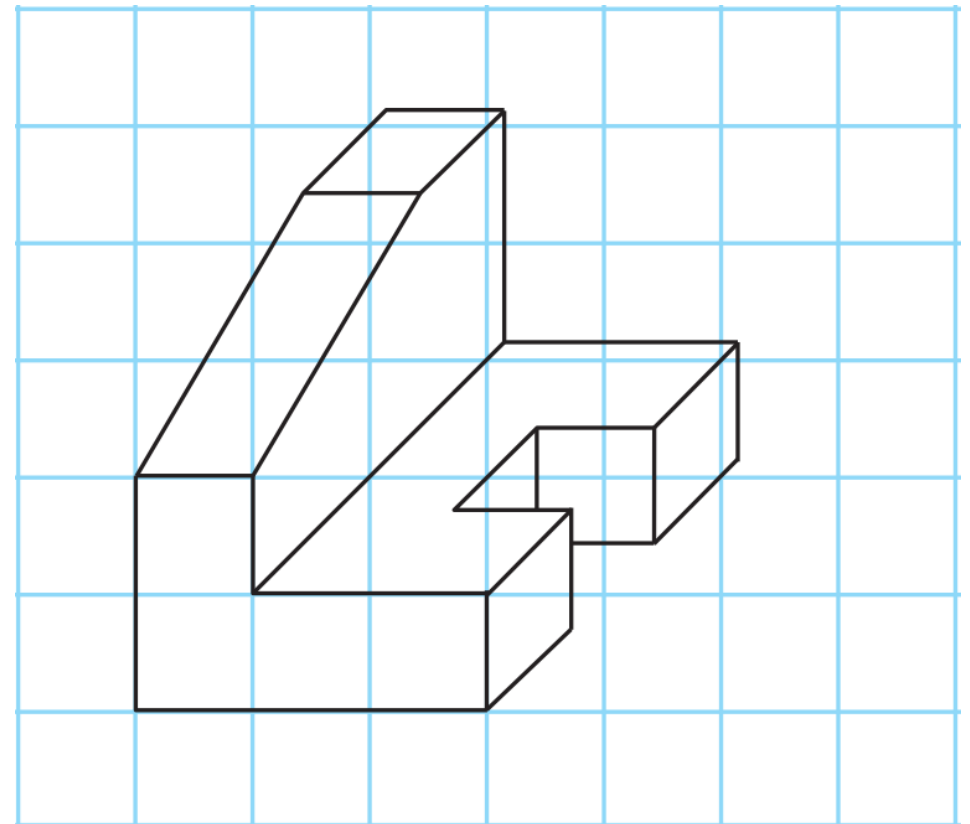
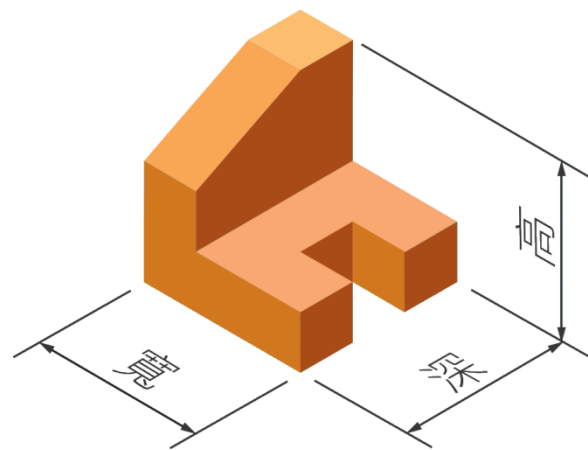




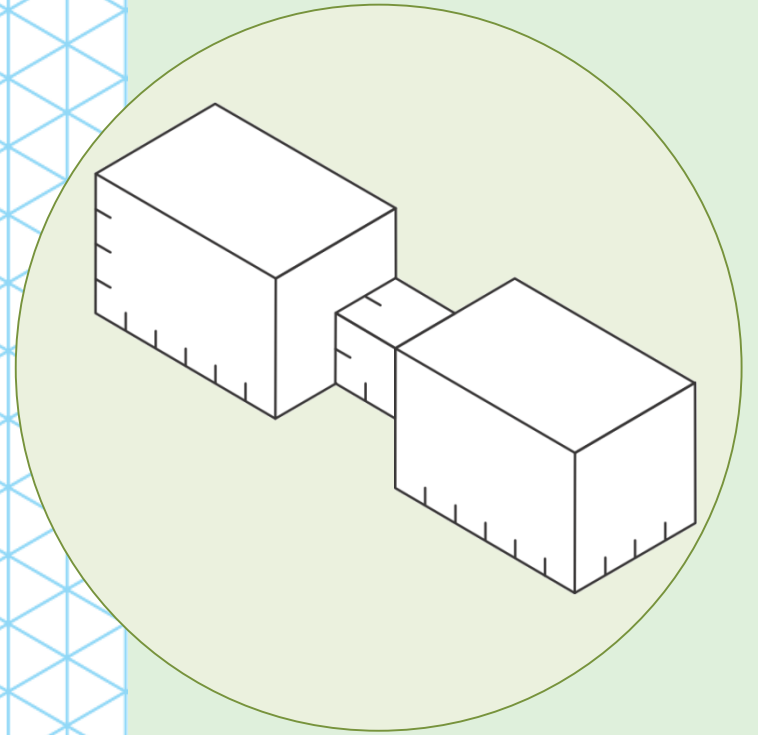
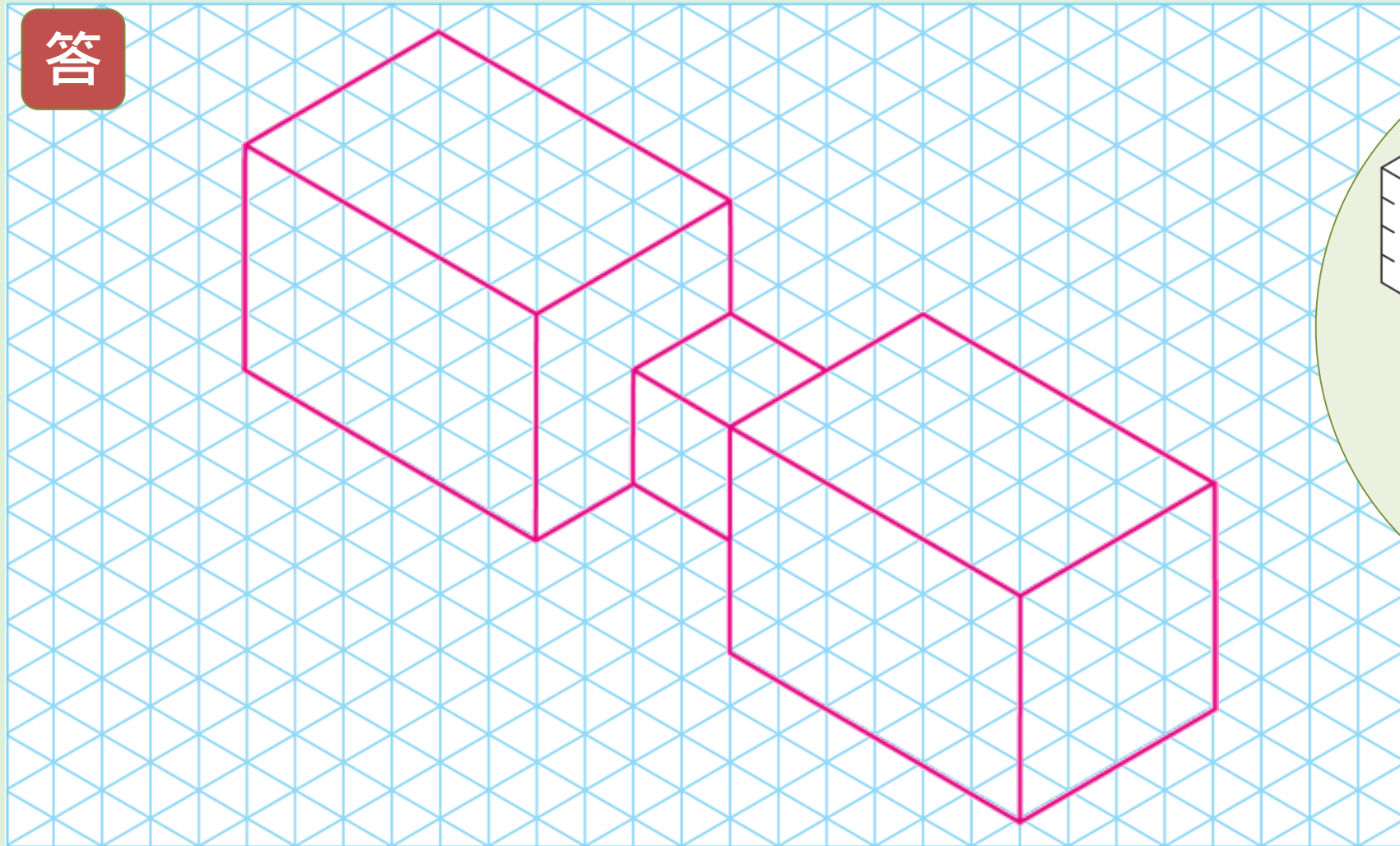
# 繪製等斜圖



F、擦掉多餘的線條，完成等斜圖。

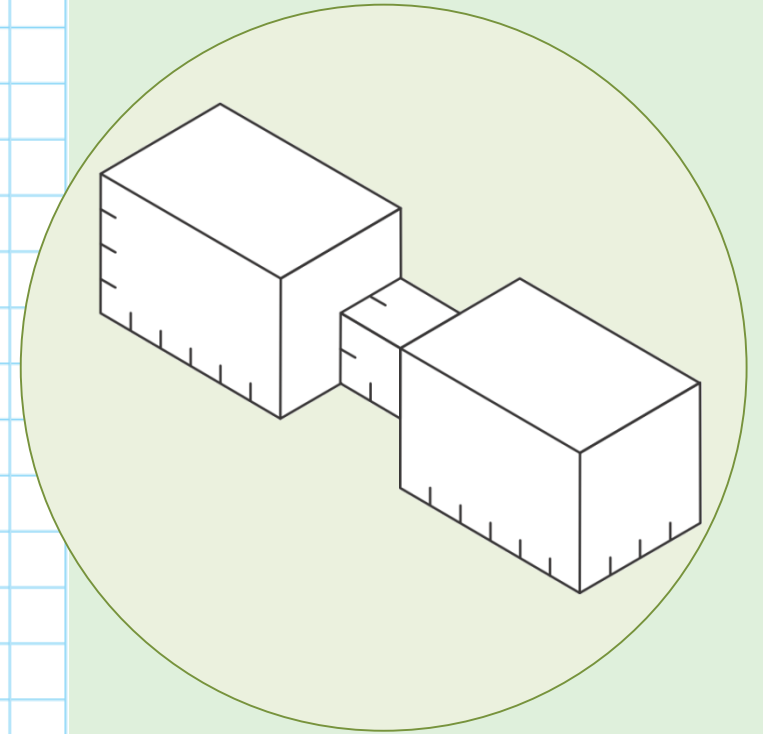
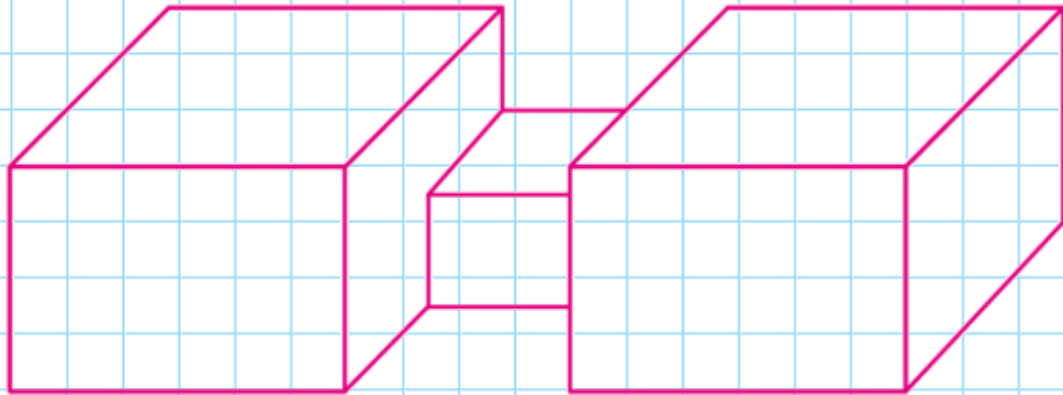


- 試試看，依據圖2-2-21繪製等角圖與等斜圖。



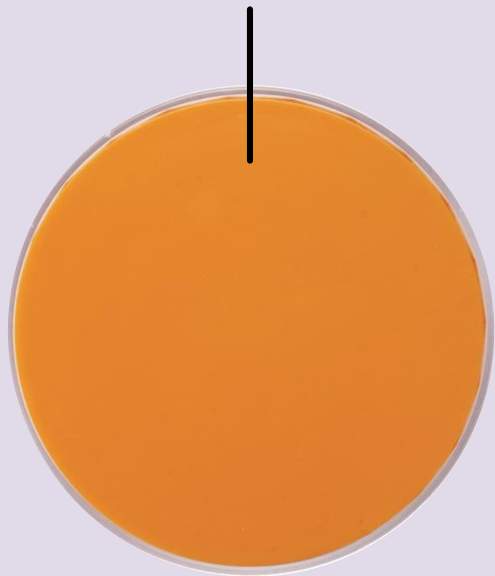
- 試試看，依據圖2-2-21繪製等角圖與等斜圖。

答



- 觀察圓柱的外形

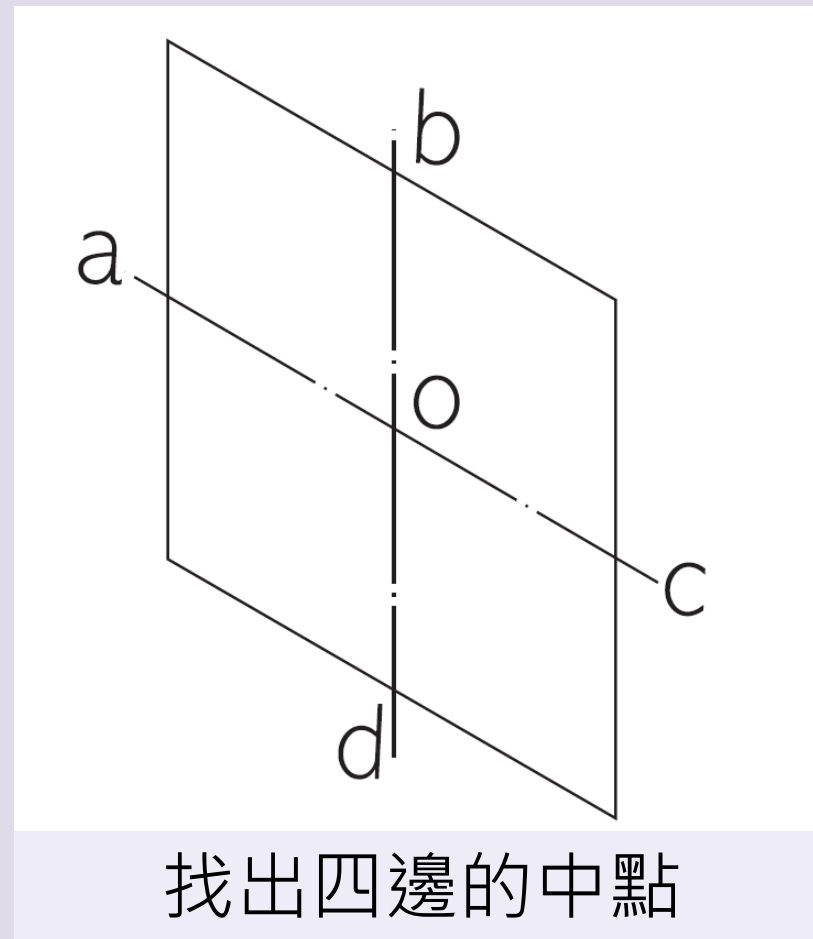
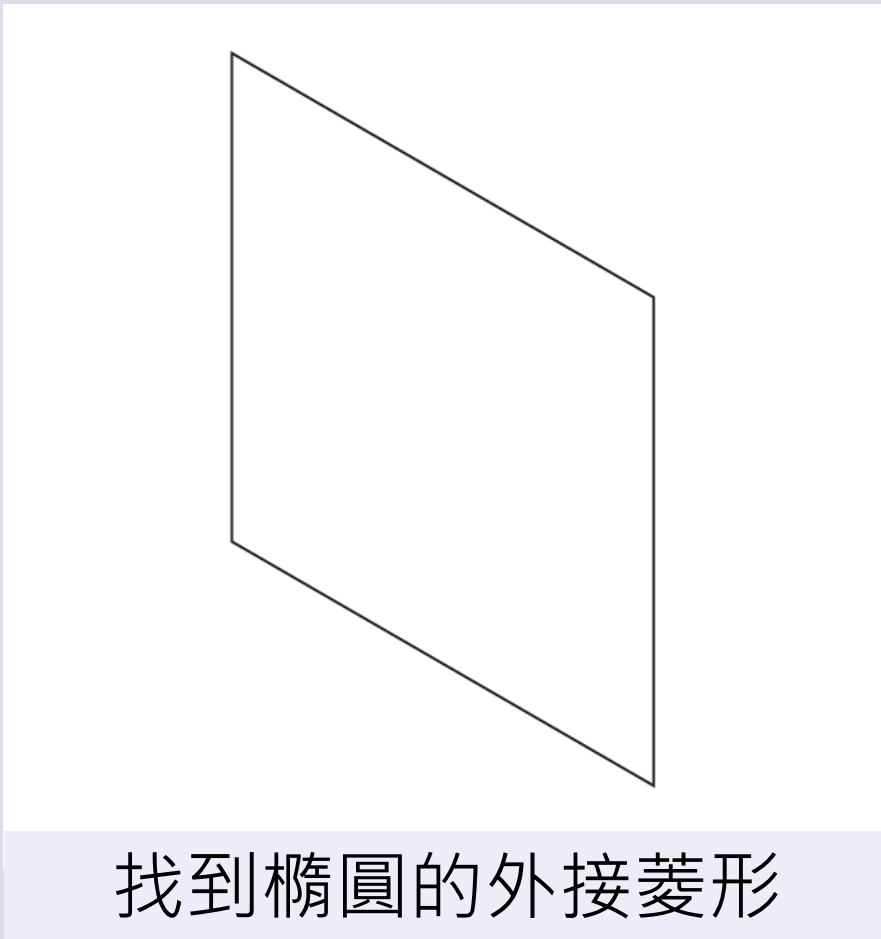
俯看為圓形



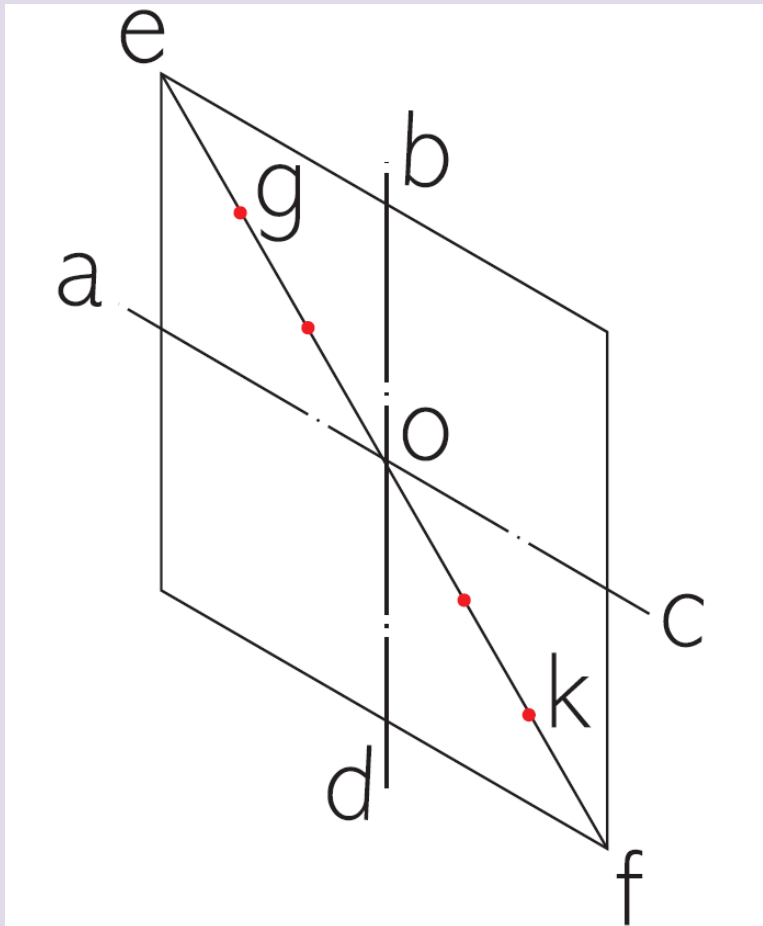
圓形的面隨著觀看角度改變，形成橢圓形



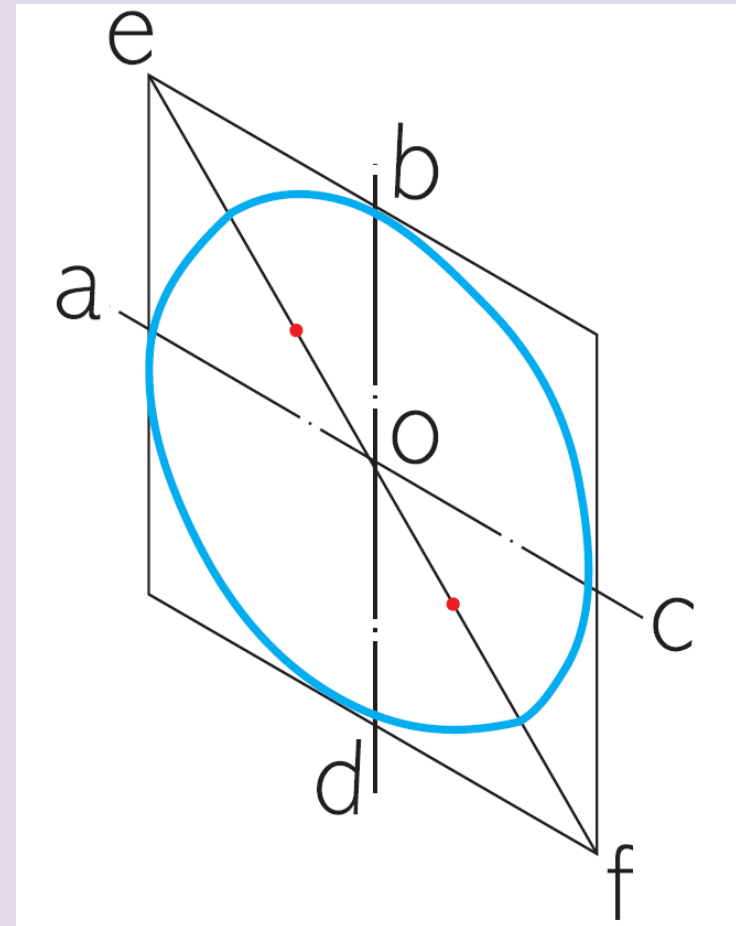
## 1. 徒手繪製橢圓的方法：



## 1. 徒手繪製橢圓的方法：

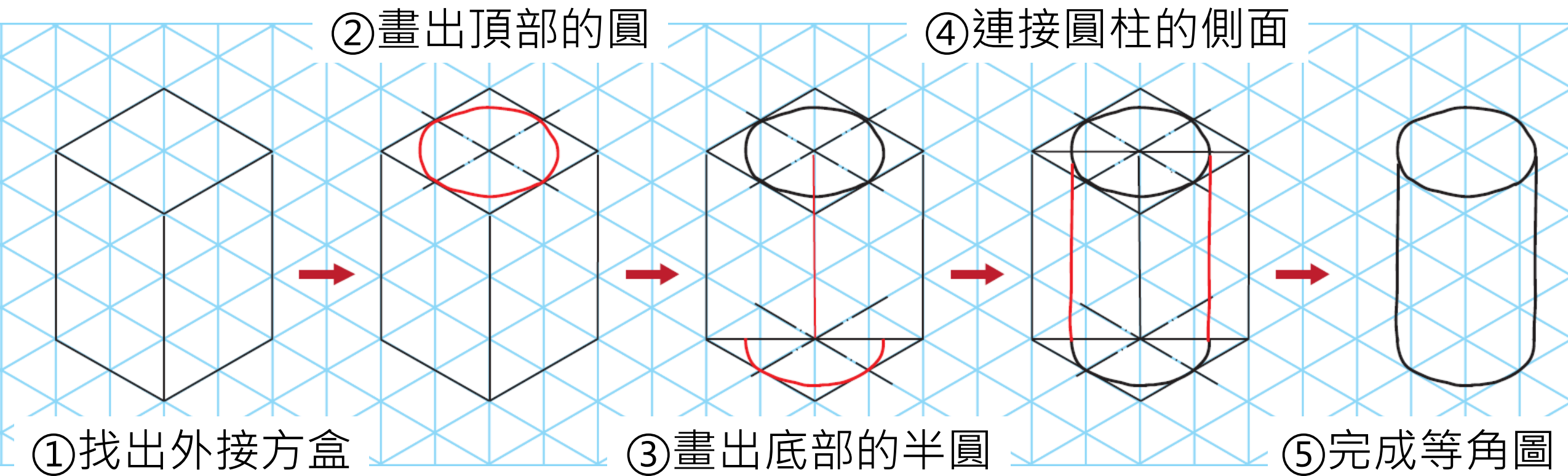


分別將 $oe$ 和 $of$ 三等分



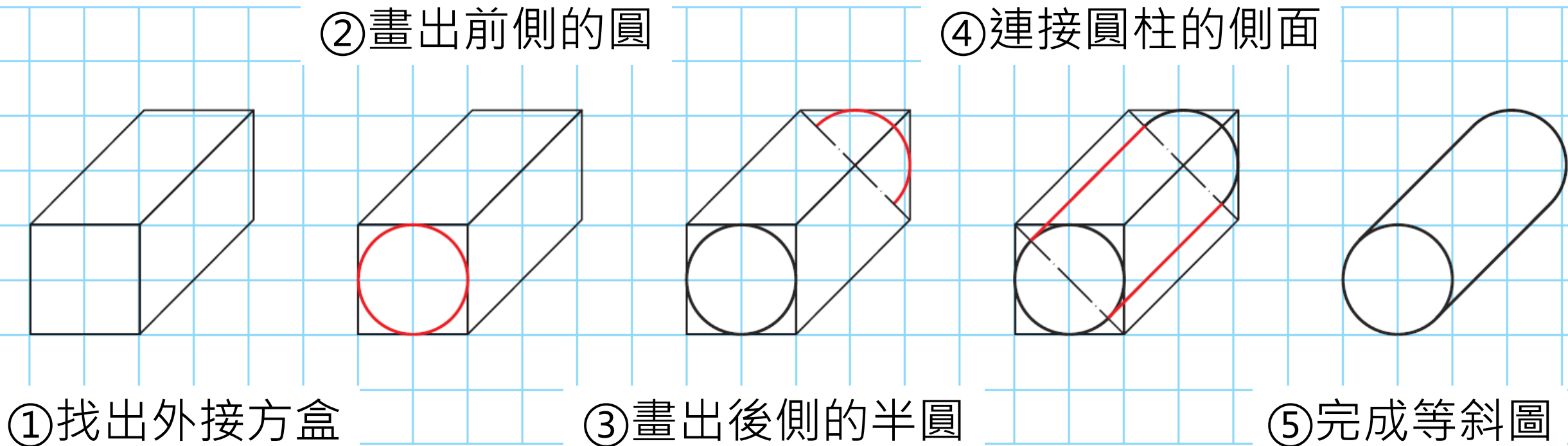
連接各點，即成橢圓

## 2. 徒手繪製圓柱等角圖的方法：



## 3. 圓柱等斜圖的畫法：

一般會選擇特徵明顯或較複雜的一面作為正面，因此繪製圓柱時應以圓為正面。





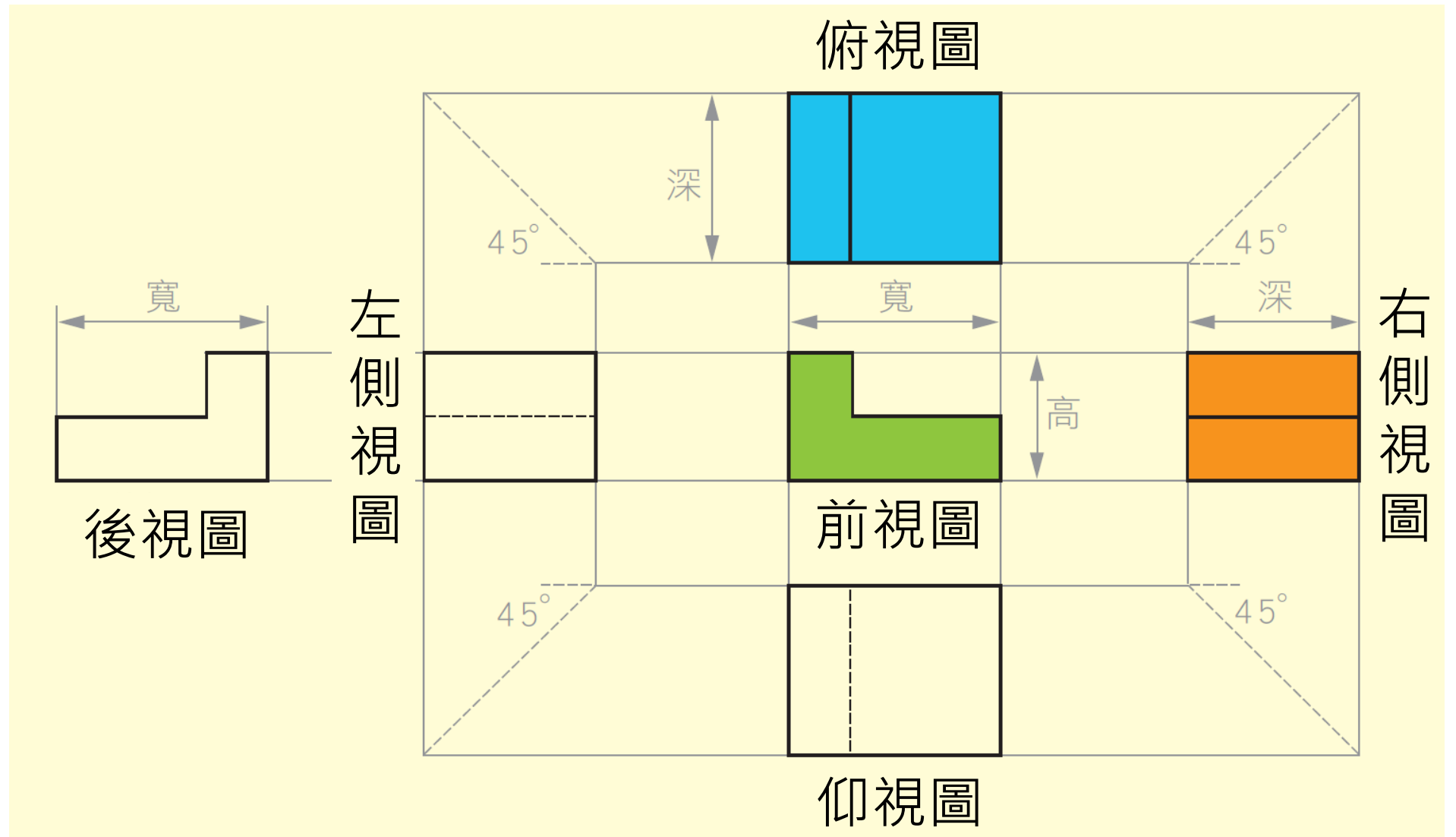
## 2. 平面圖

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# 正投影多視圖



3. 打開透明箱展平所得的視圖即為正投影多視圖。



- 為了簡化正投影多視圖，繪製時通常只選擇三個面向來表達，故又稱為**三視圖**。
- **三視圖**：
  - ◆ 該面向看得見的輪廓線以「實線」繪製。
  - ◆ 看不見的輪廓線則以「虛線」表示。

# 三視圖



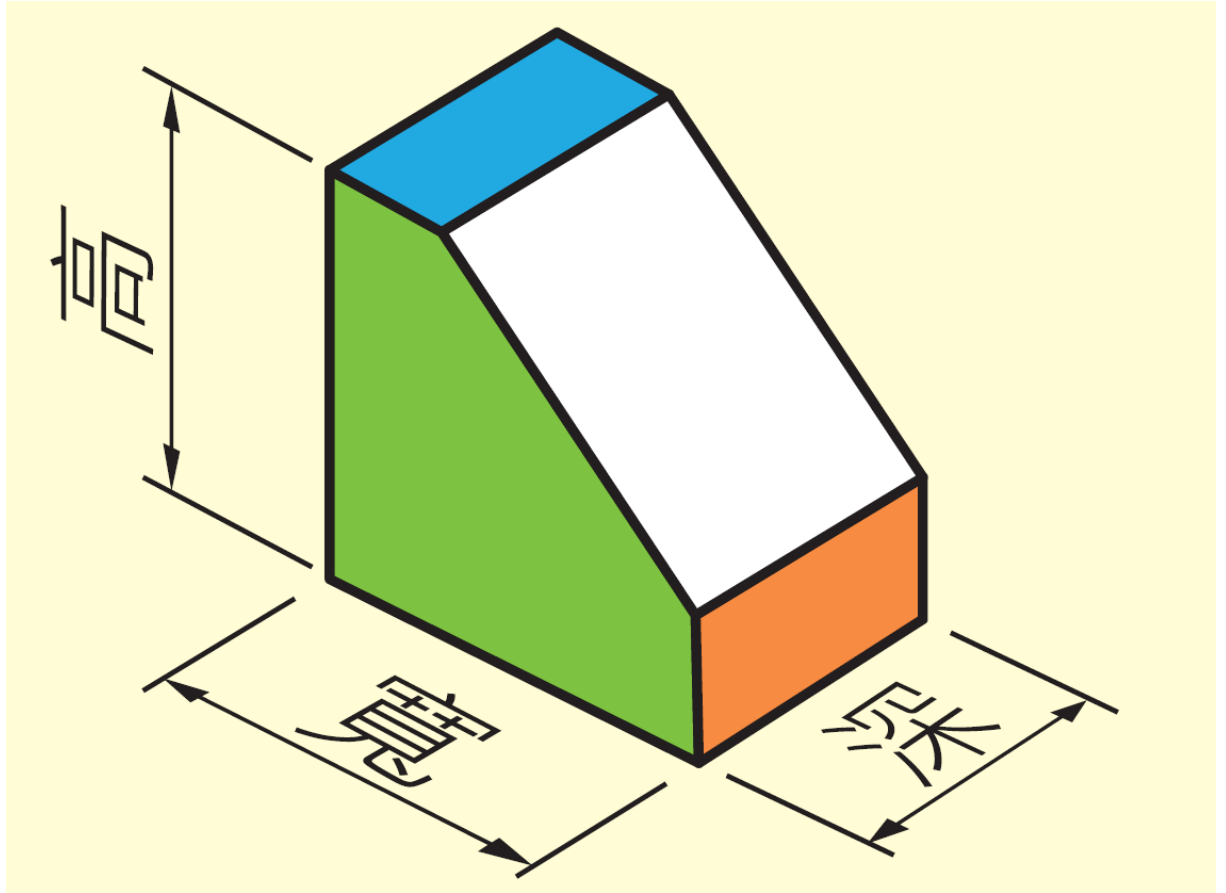
## 線條的種類、畫法及用途

總類	實線		虛線	鏈線
樣式				
粗細	粗	細	中	細
畫法	連續線	連續線	每段長約3 mm，間隔約1 mm	每段長約20 mm，兩線中間為一點，點線間隔約1 mm
用途	輪廓線	尺度標註線隱	隱藏線	中心線、假想線（例如：對稱軸）

# 繪製三視圖



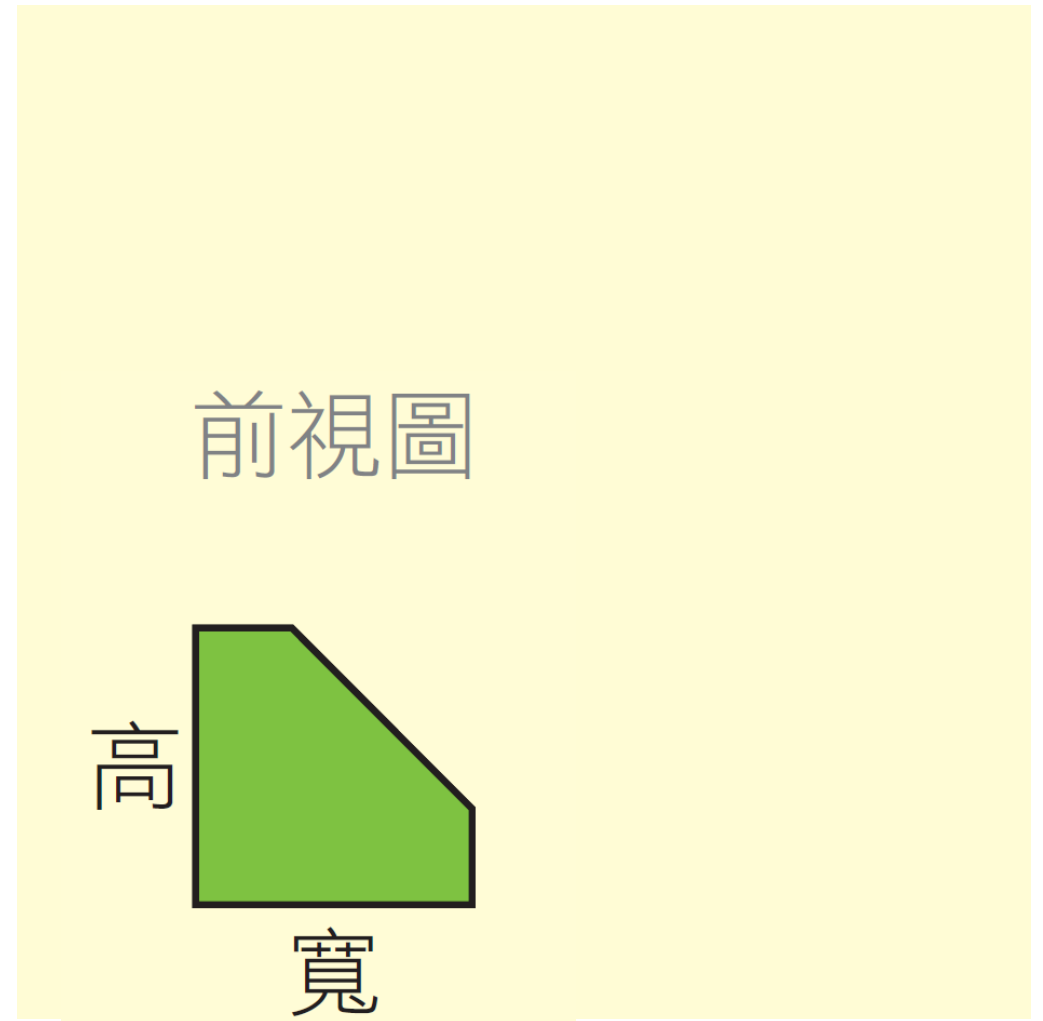
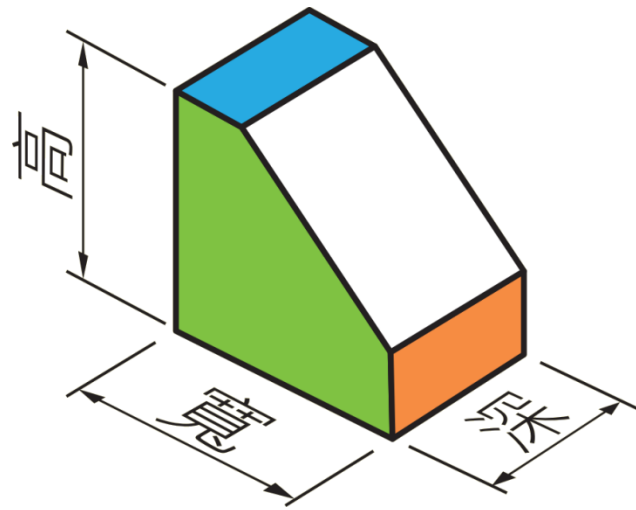
A、選取物體最具特色的面作為正面，並測量出物體的寬、高、深。



# 繪製三視圖



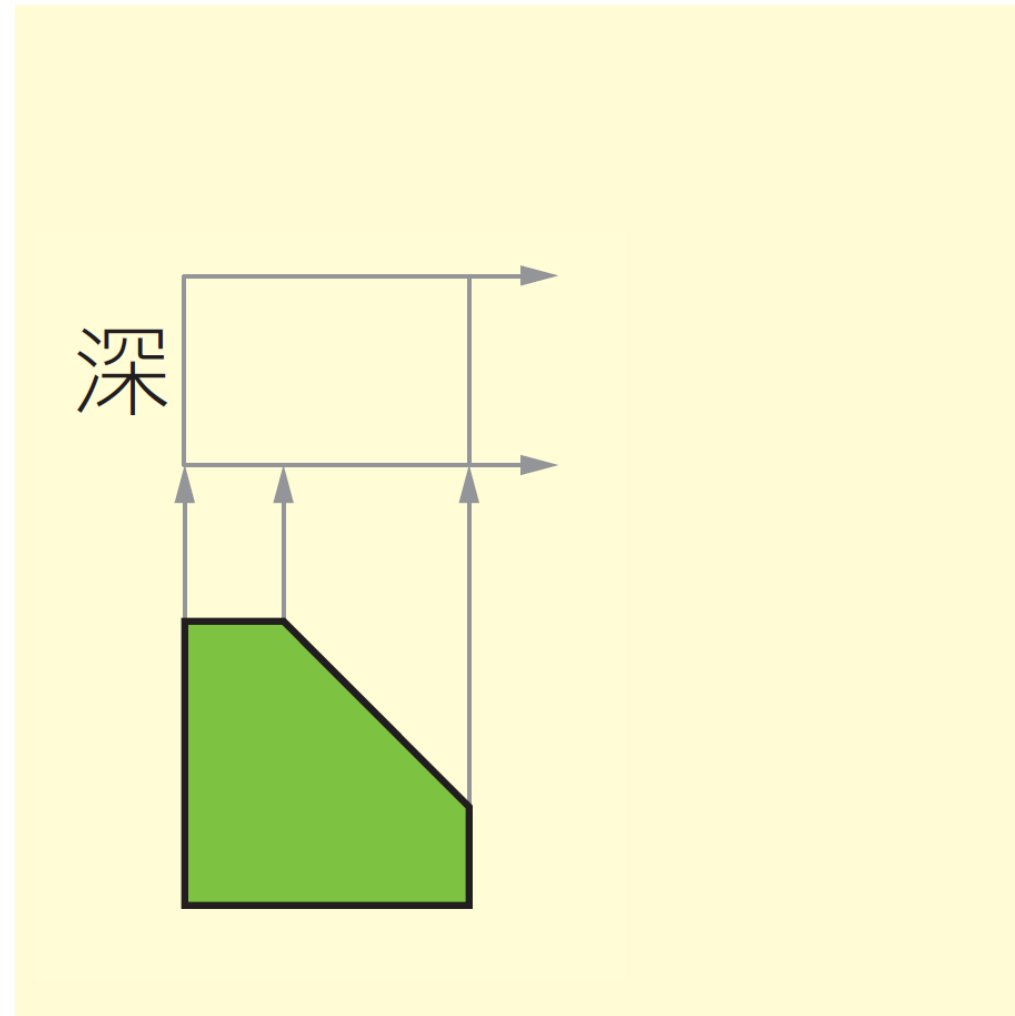
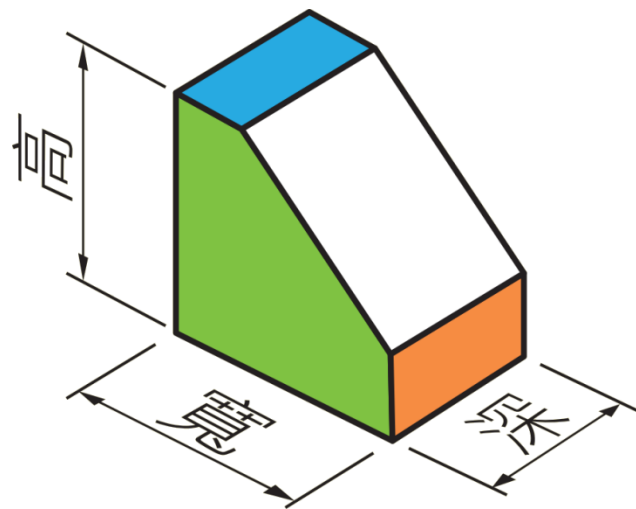
B、畫出前視圖。



# 繪製三視圖



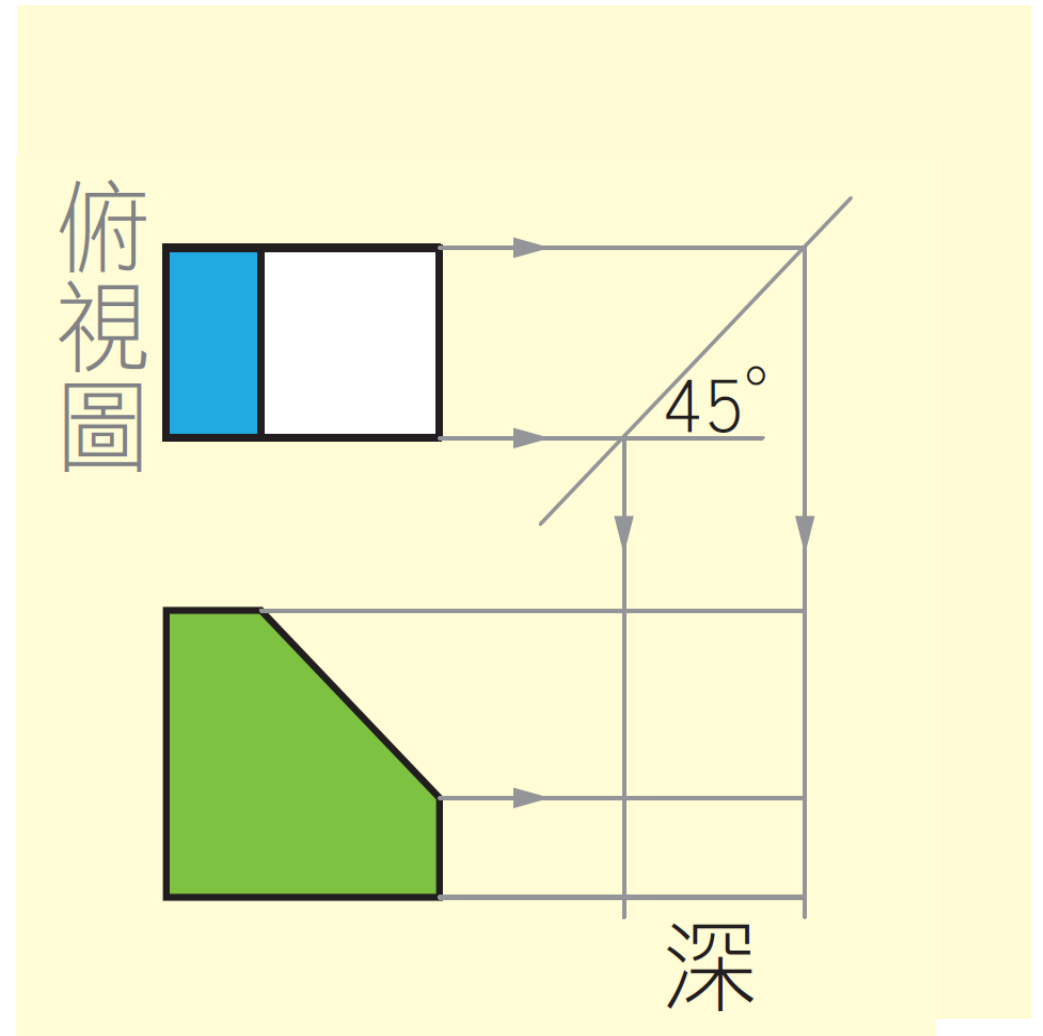
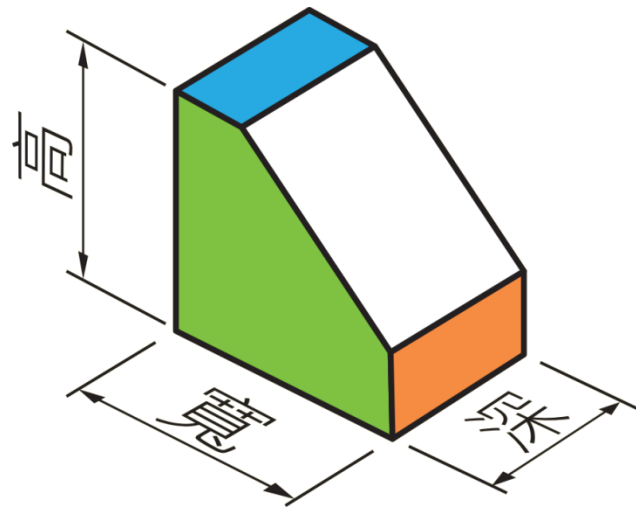
C、於前視圖上方標線，找出俯視圖的相關位置。



# 繪製等斜圖



D、畫出俯視圖，依前視圖與俯視圖找出右側視圖的相關位置。

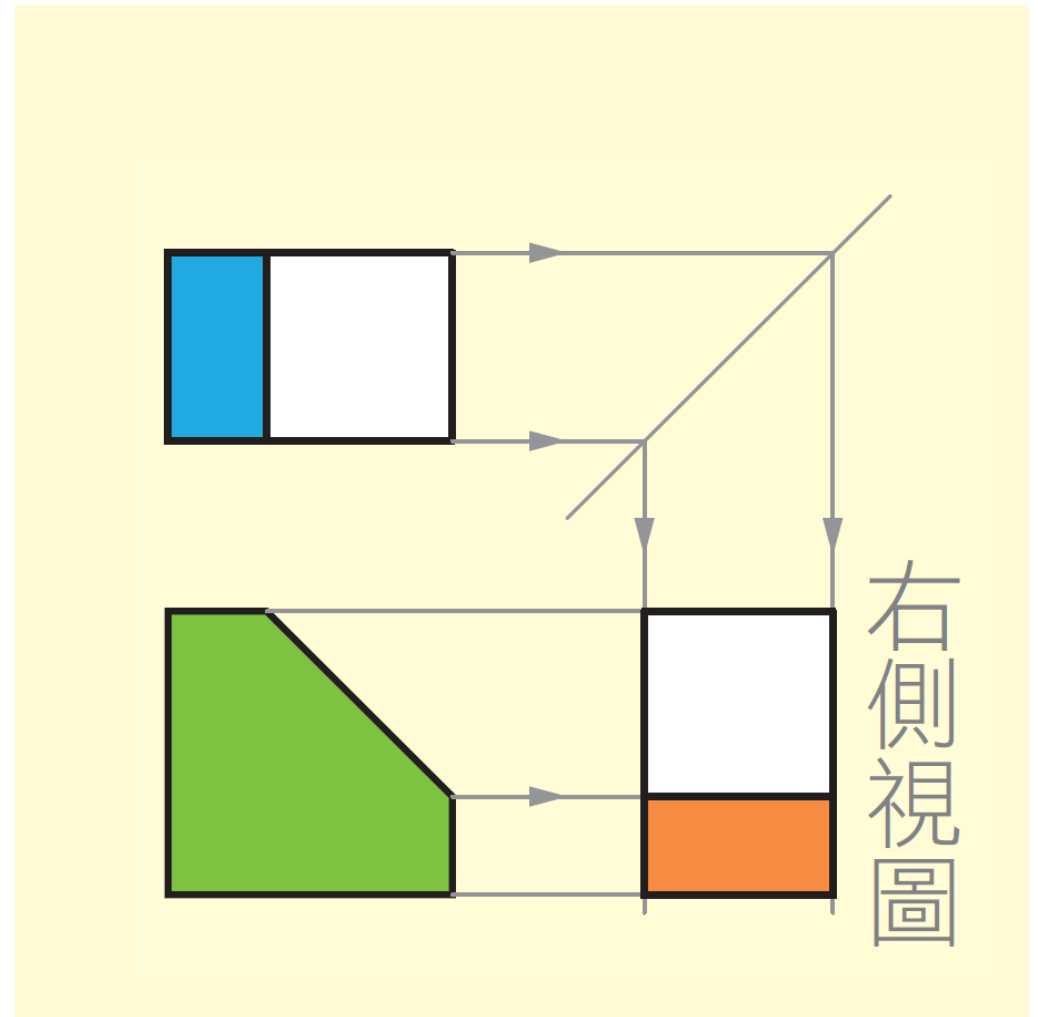
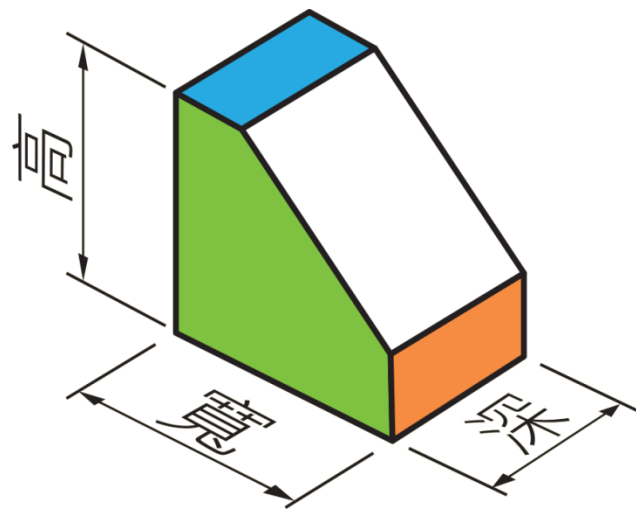




# 繪製三視圖



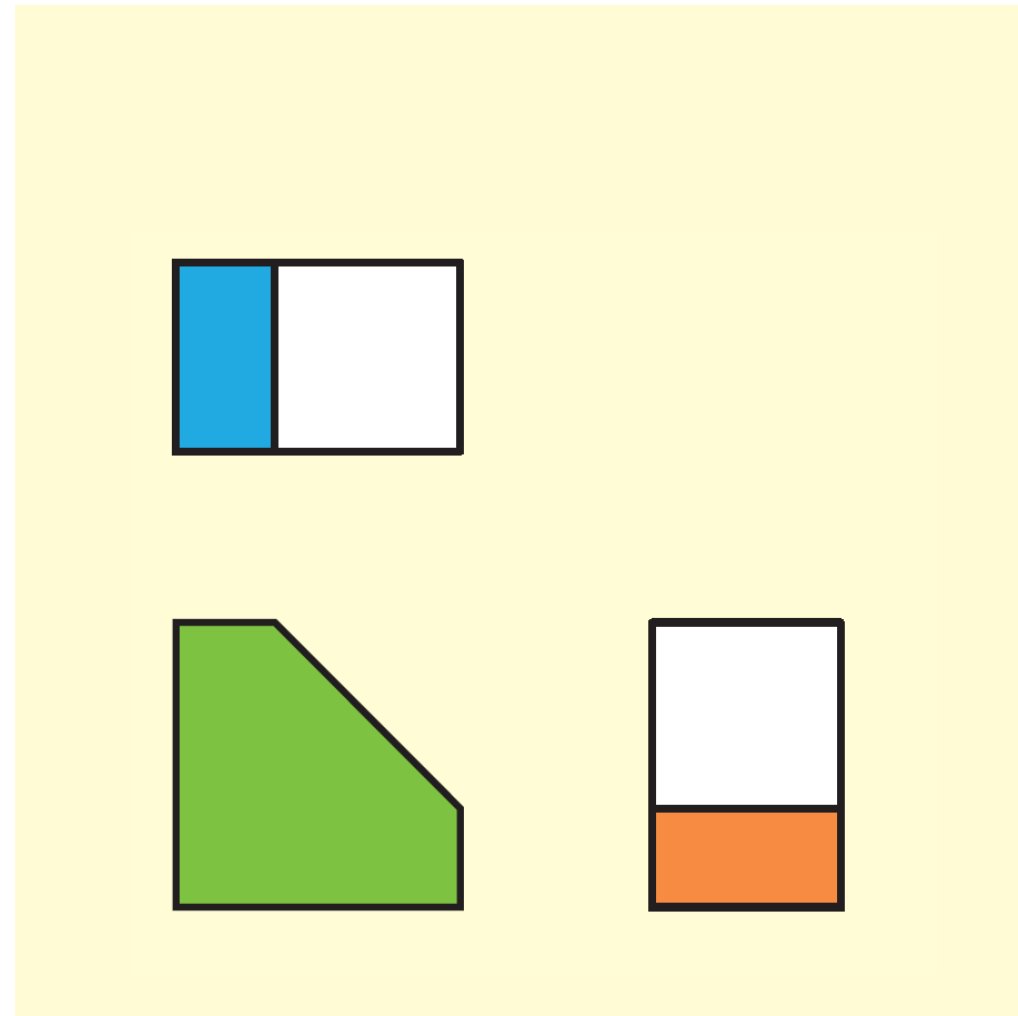
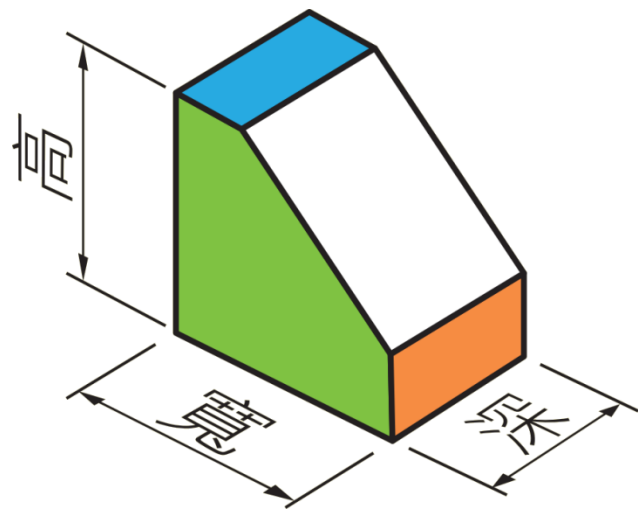
E、畫出右側視圖。



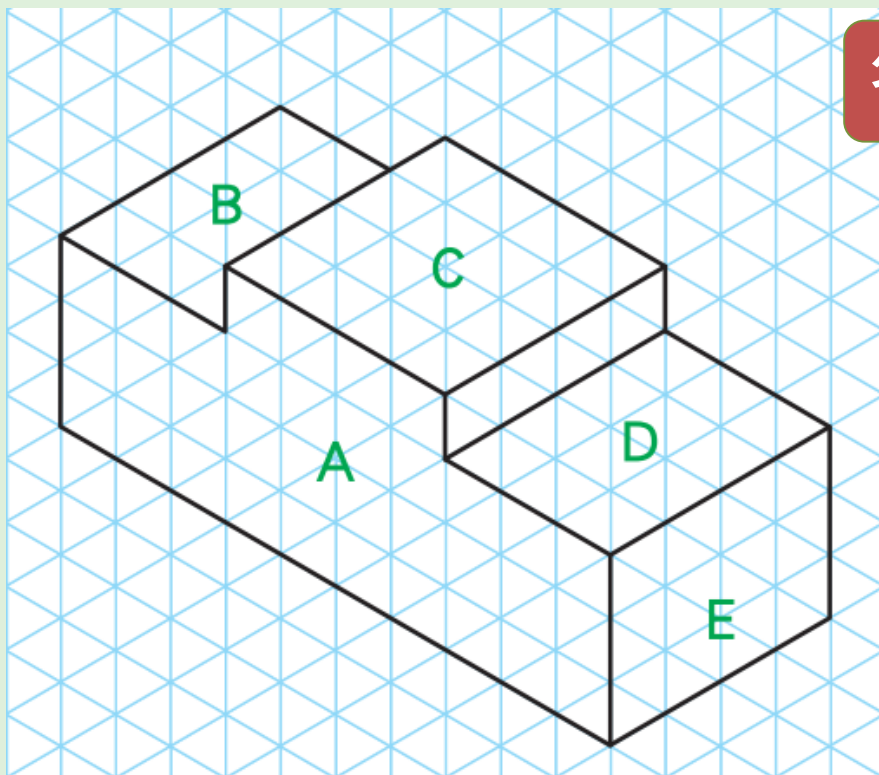
# 繪製三視圖



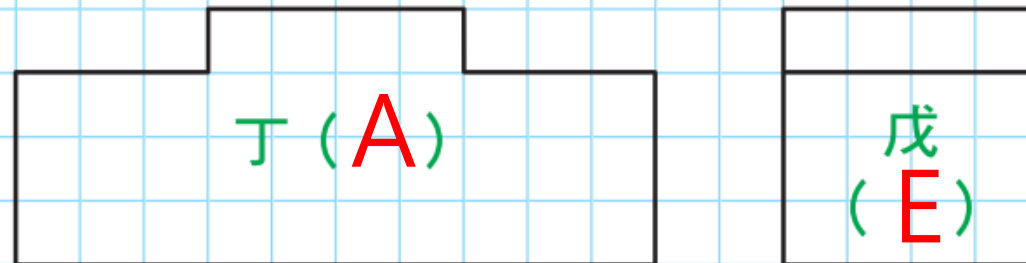
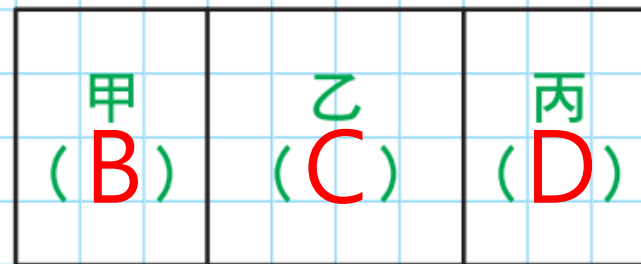
F、清除多餘線條即完成。



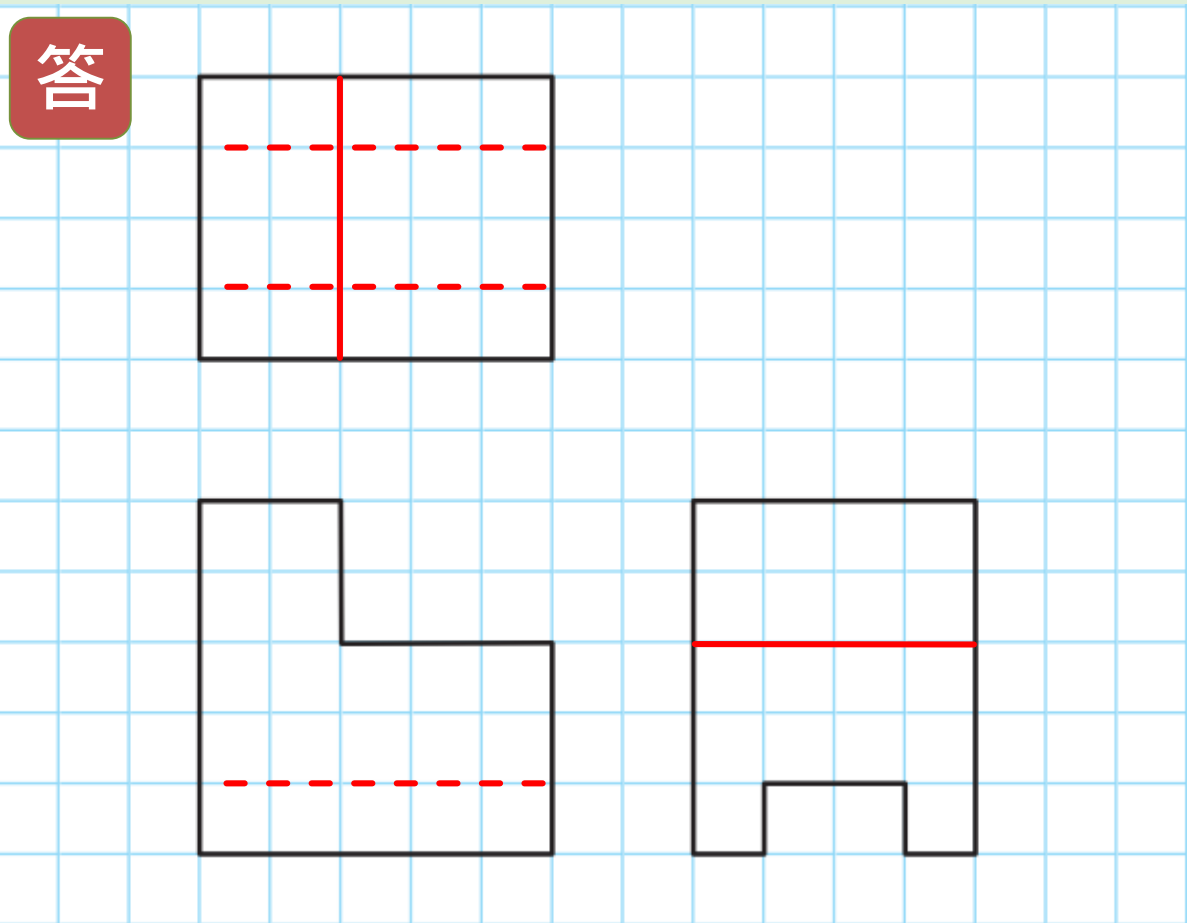
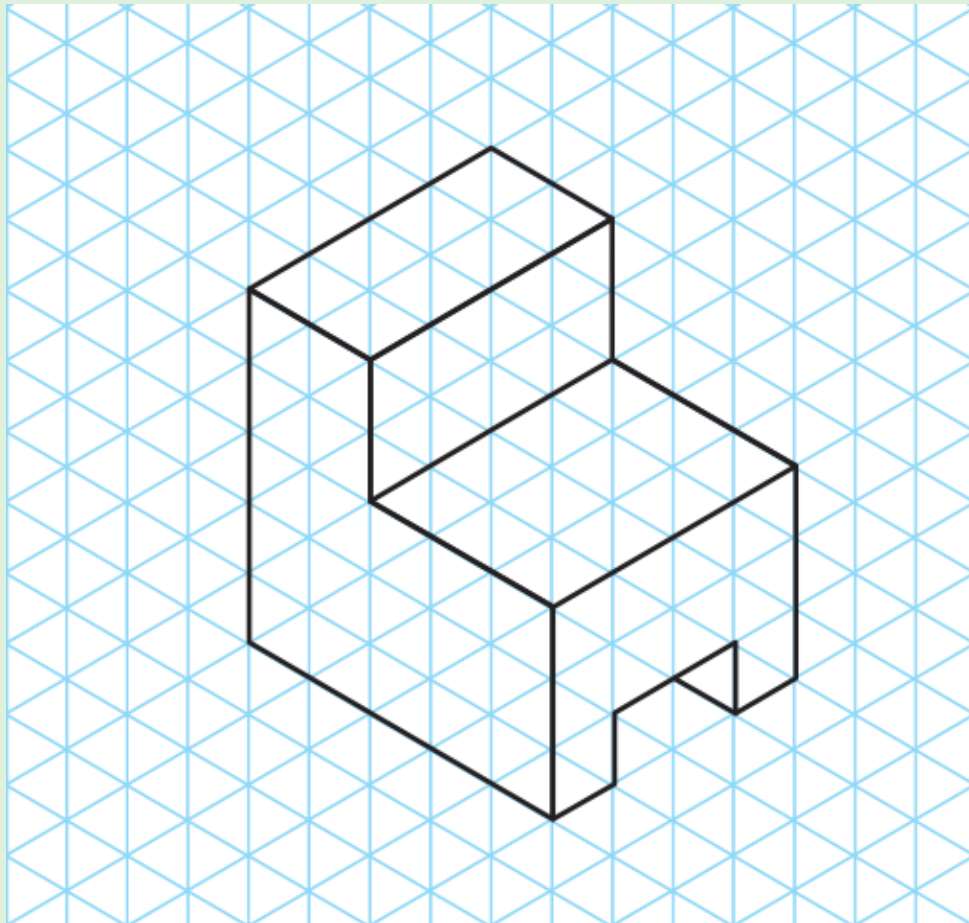
1. 下圖為同一物體的等角圖與三視圖，在三視圖中的甲～戊區域，分別對應等角圖中的哪個面？請將正確英文字母填入對應空格中。



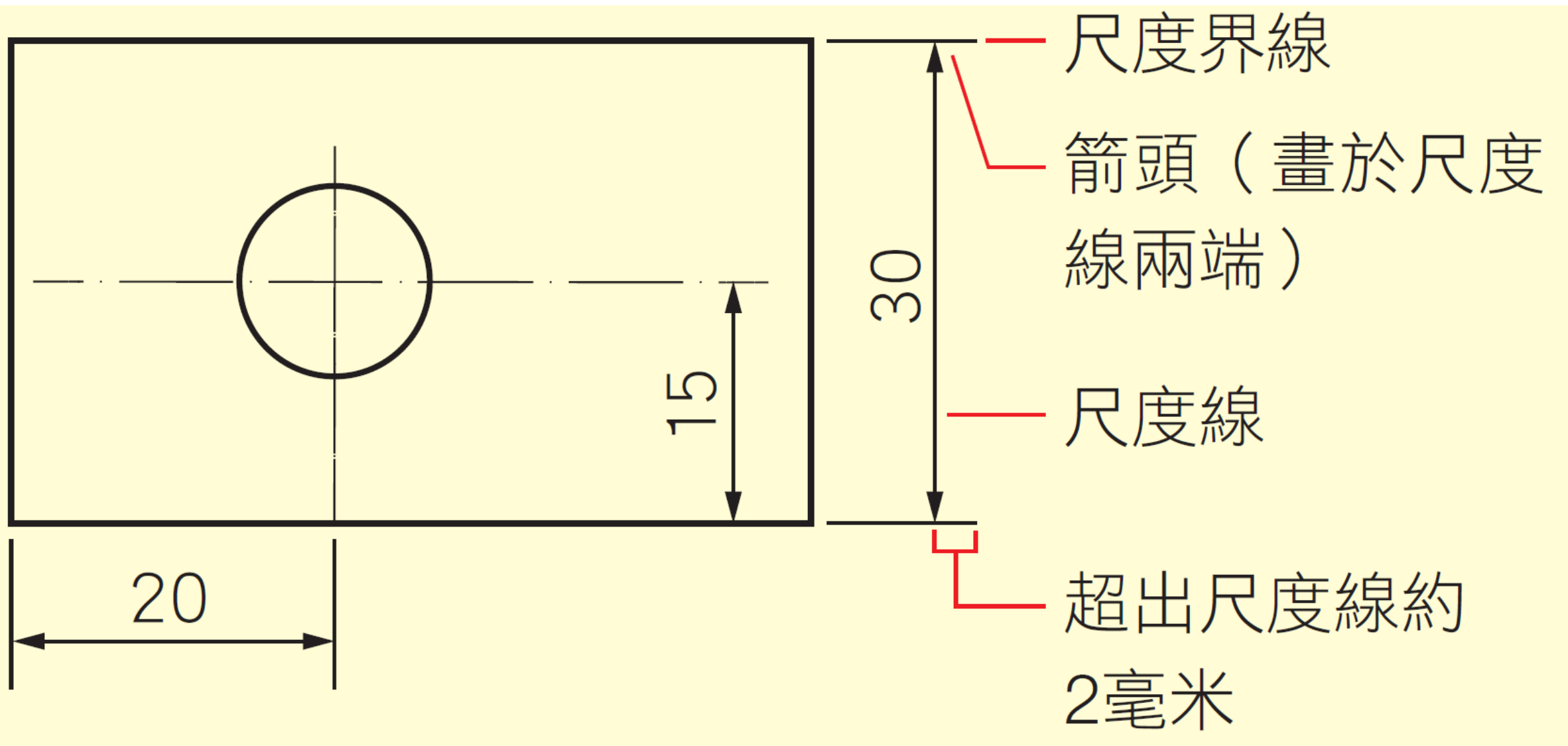
答



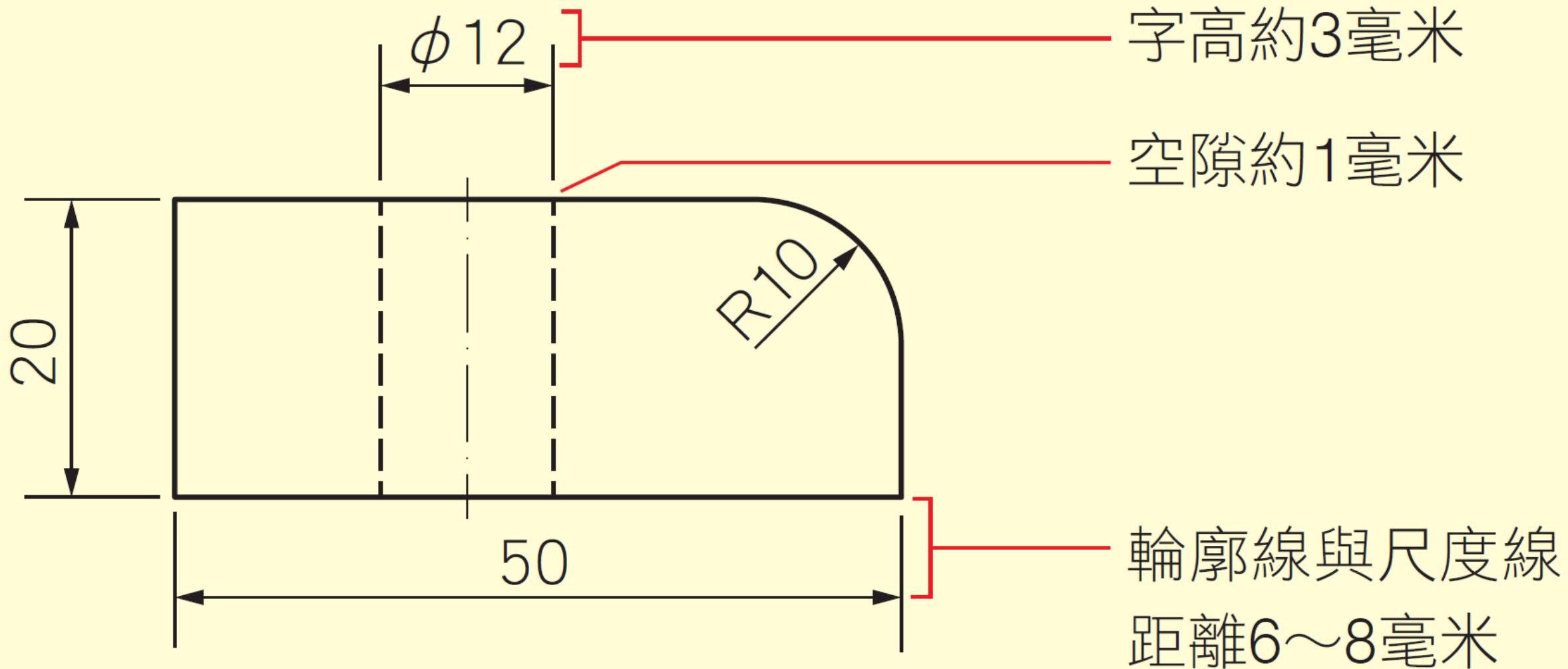
2. 依據左下圖，將右方三視圖所遺漏的線條補上去。



# 三視圖的尺度標註



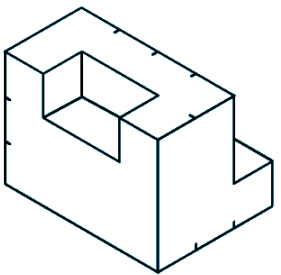
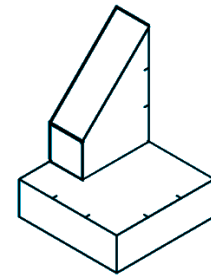
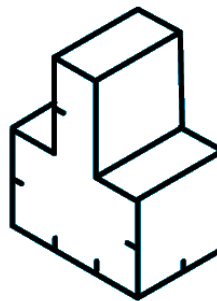
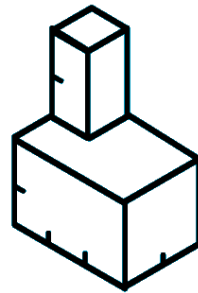
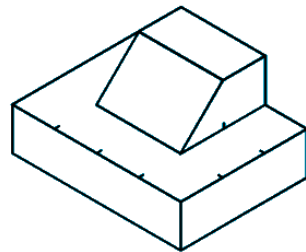
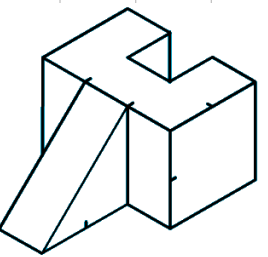
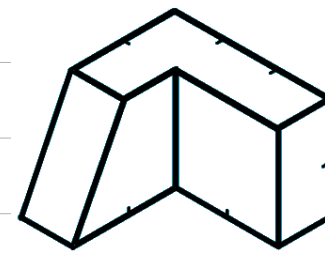
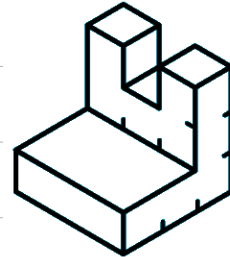
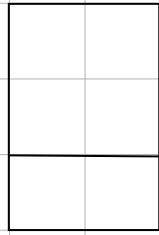
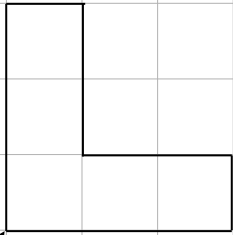
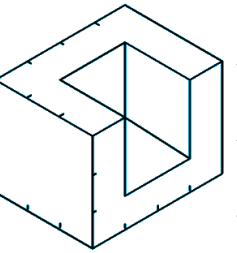
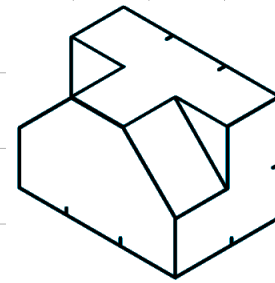
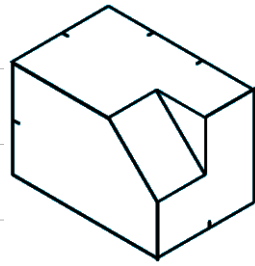
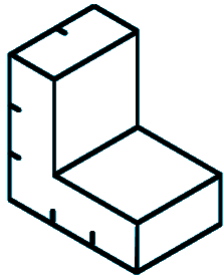
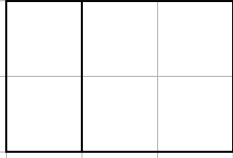
# 三視圖的尺度標註



# 識圖製圖

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## 結束



班座號：