

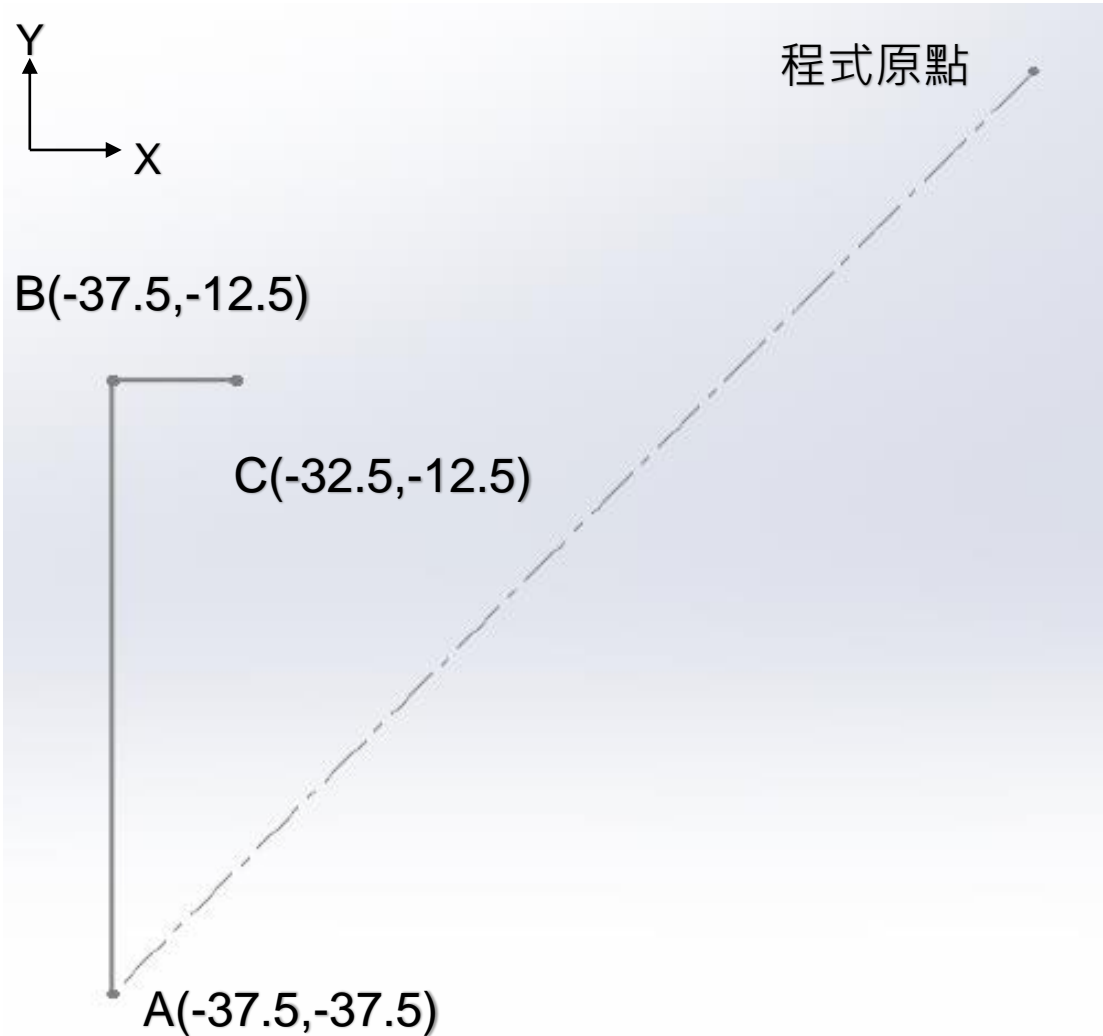
# 多圖形及其他進階練習題

黃建傑

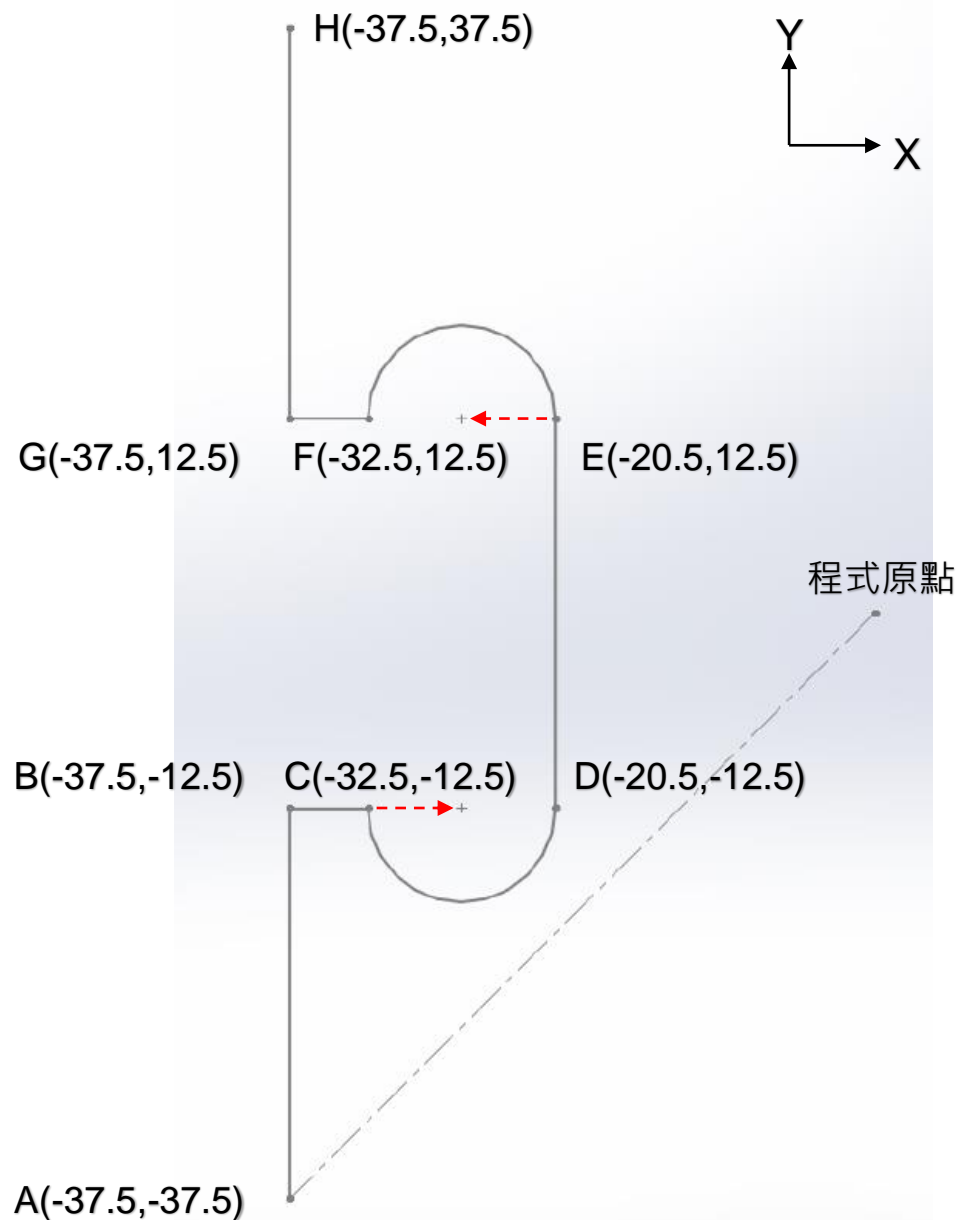
-

## 絕對座標 (G90)

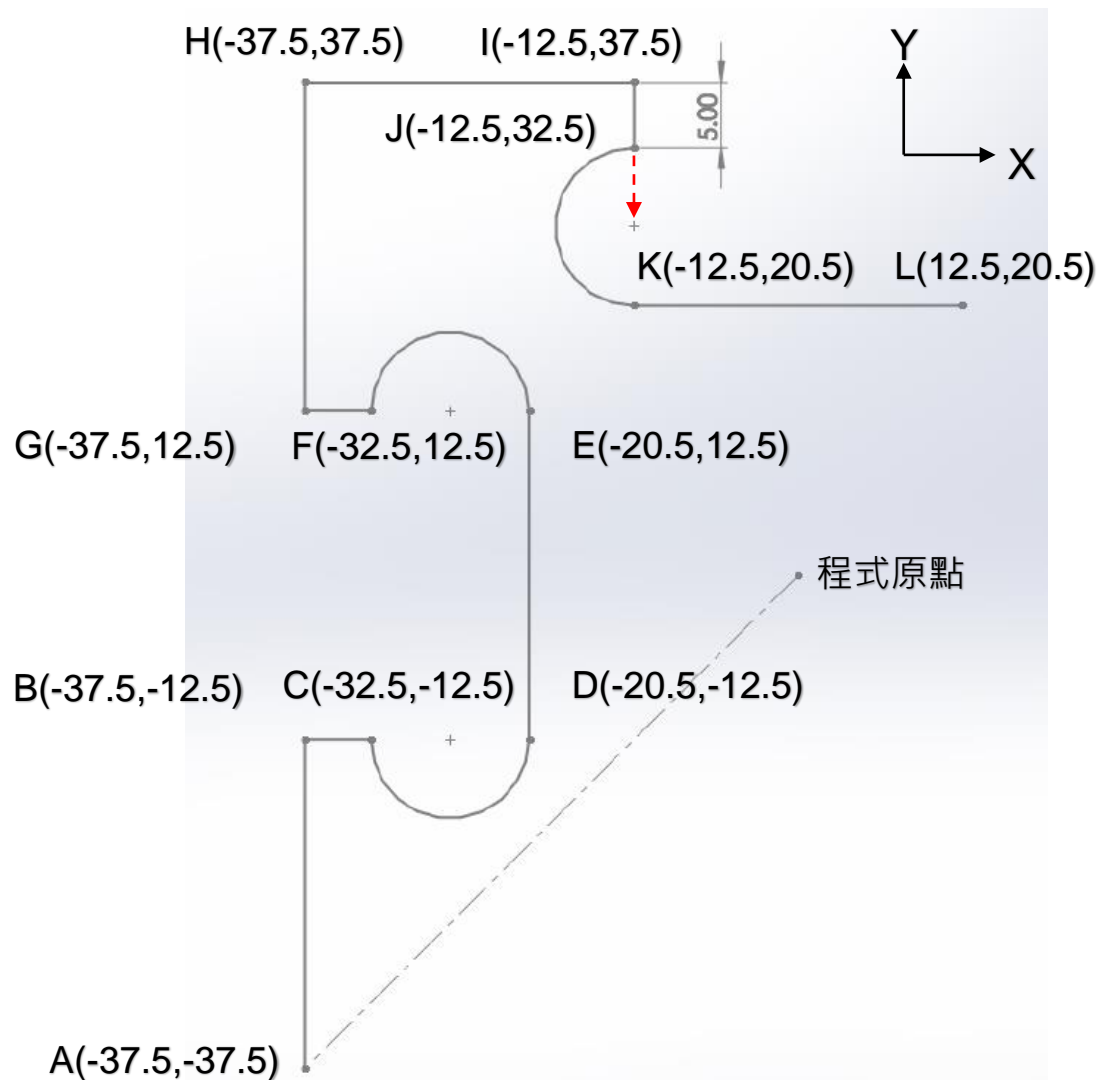
- M05 S0
- G90
- G21
- G1 F600
- G0 X-37.5 Y-37.5
- G4 P0
- M03 S255
- G4 P0
- G1 F600
- G1 X-37.5 Y-12.5
- G1 X-32.5 Y-12.5



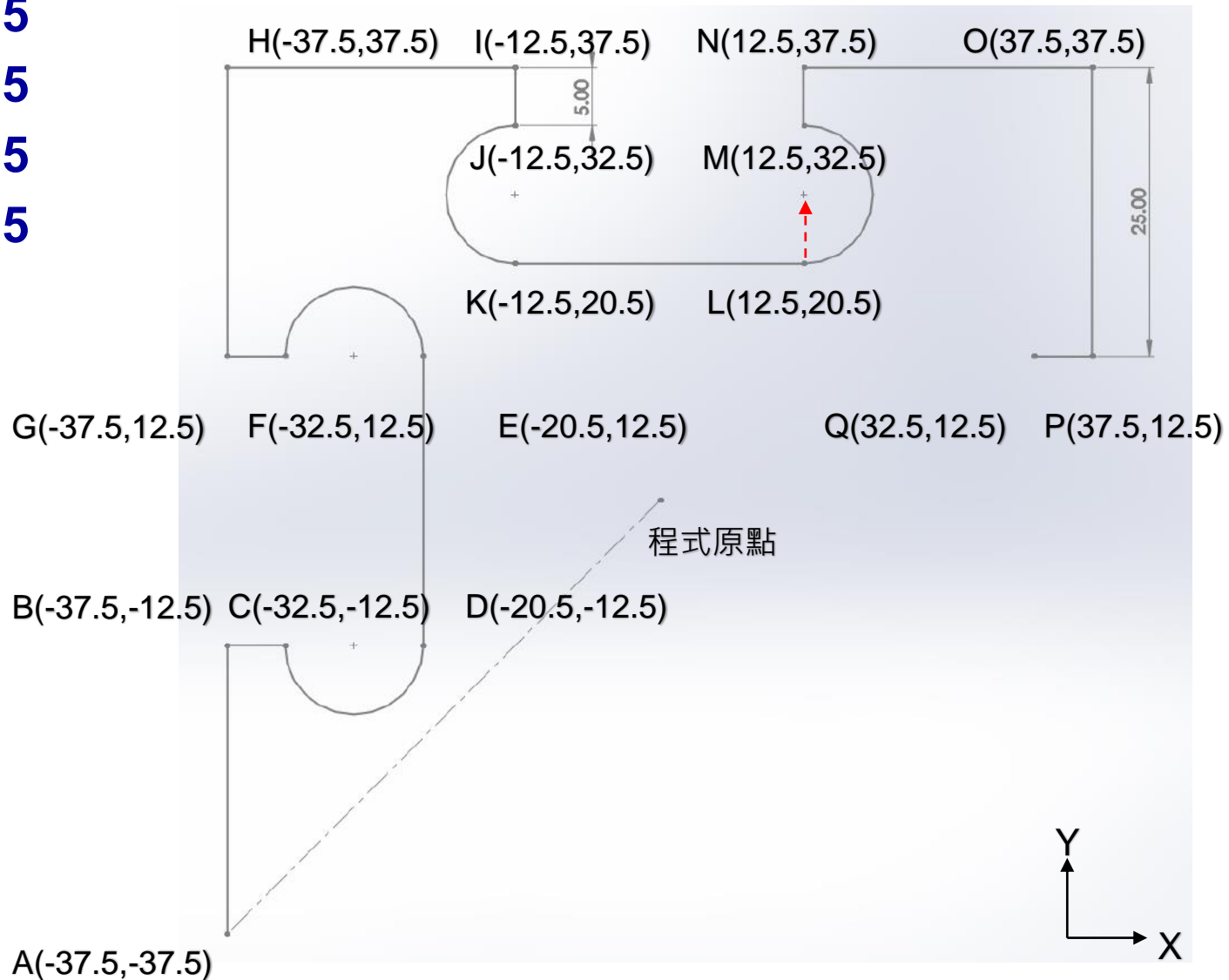
- G3 X-20.5 Y-12.5 I6. J0.
- G1 X-20.5 Y12.5
- G3 X-32.5 Y12.5 I-6. J0.
- G1 X-37.5 Y12.5
- G1 X-37.5 Y37.5



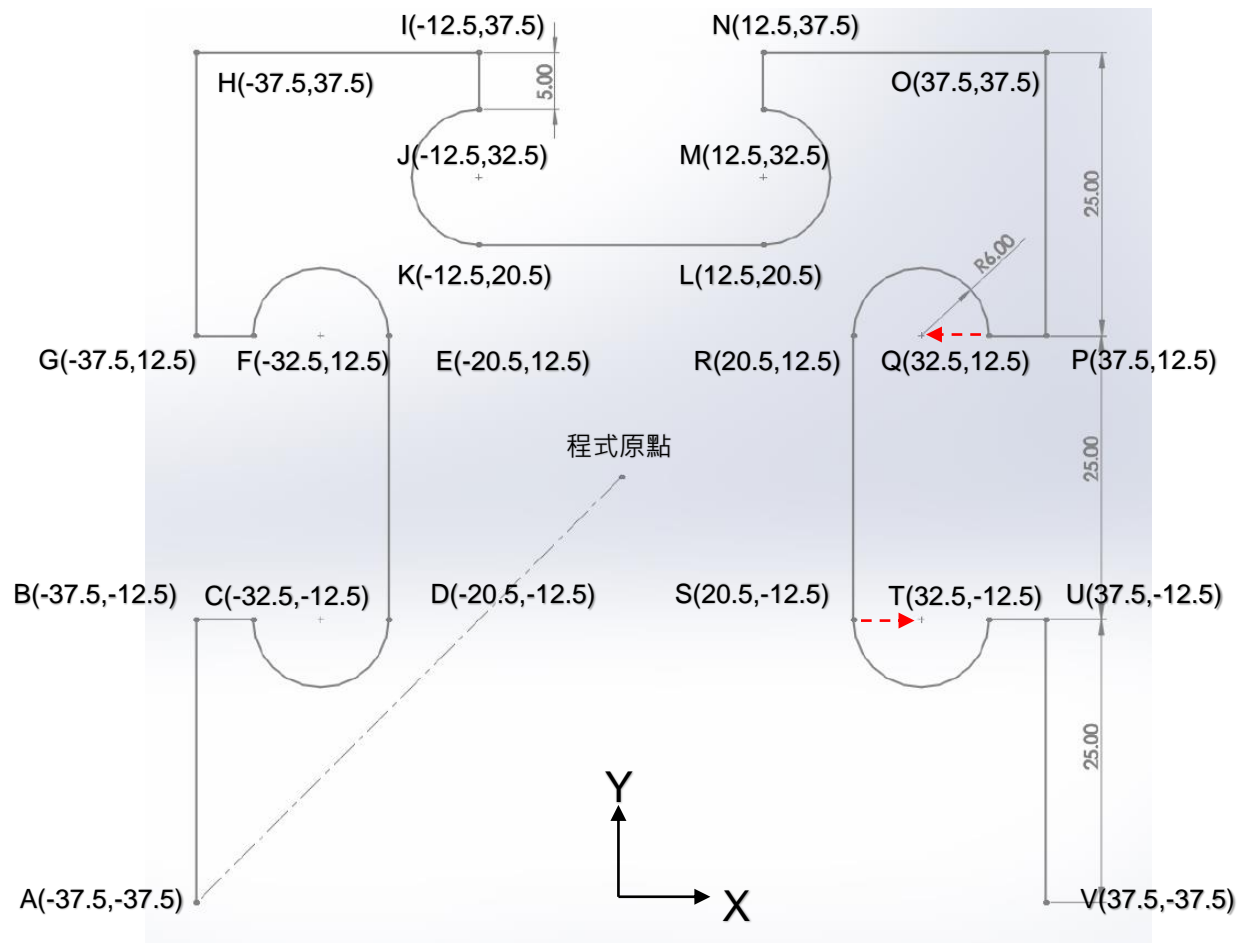
- G1 X-12.5 Y37.5
- G1 X-12.5 Y32.5
- G3 X-12.5 Y20.5 I0. J-6.
- G1 X12.5 Y20.5



- G3 X12.5 Y32.5 I0. J6.
- G1 X12.5 Y37.5
- G1 X37.5 Y37.5
- G1 X37.5 Y12.5
- G1 X32.5 Y12.5



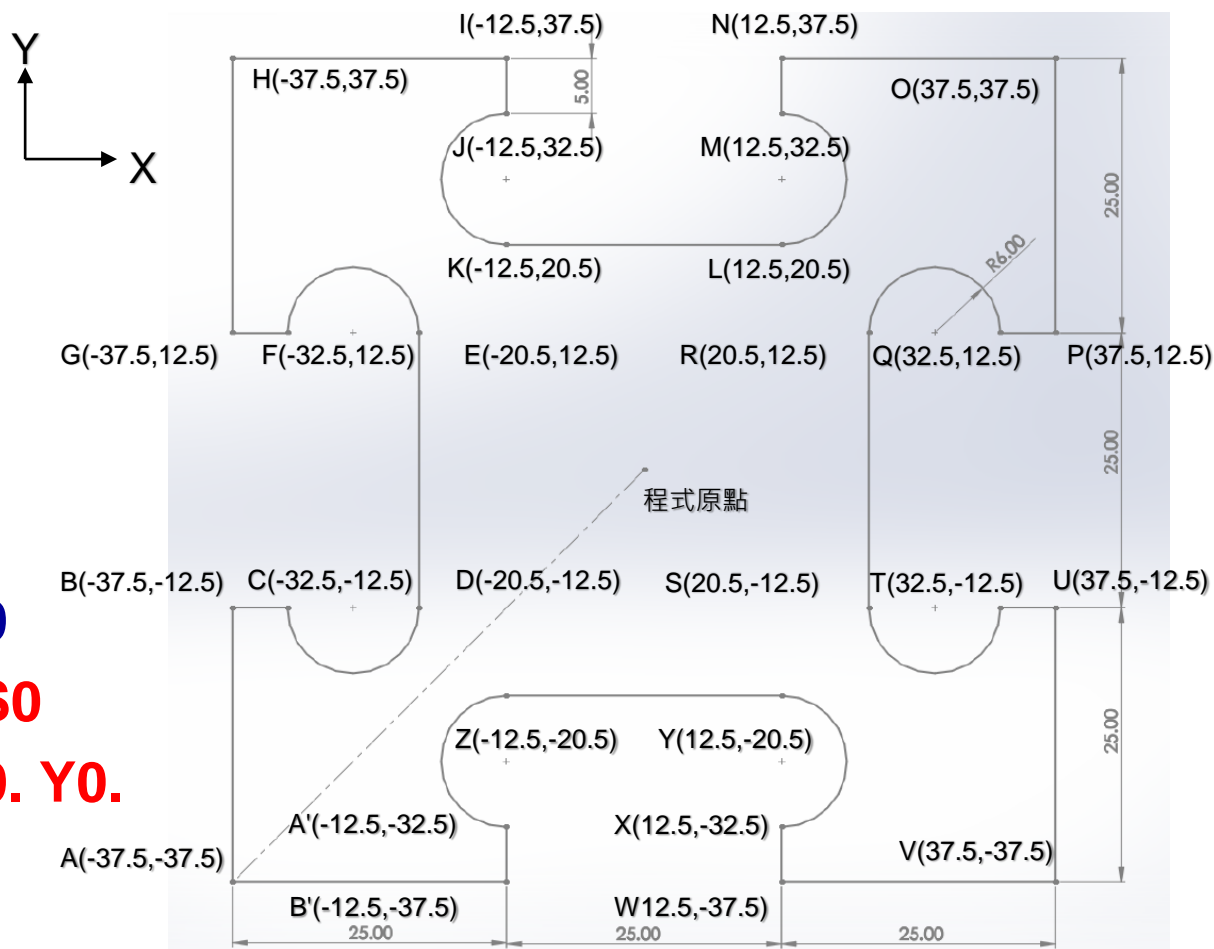
- G3 X20.5 Y12.5 I-6. J0.
- G1 X20.5 Y-12.5
- G3 X32.5 Y-12.5 I6. J0.
- G1 X37.5 Y-12.5
- G1 X37.5 Y-37.5







- G3 X-12.5 Y-32.5 I0. J-6.
- G1 X-12.5 Y-37.5
- G1 X-37.5 Y-37.5



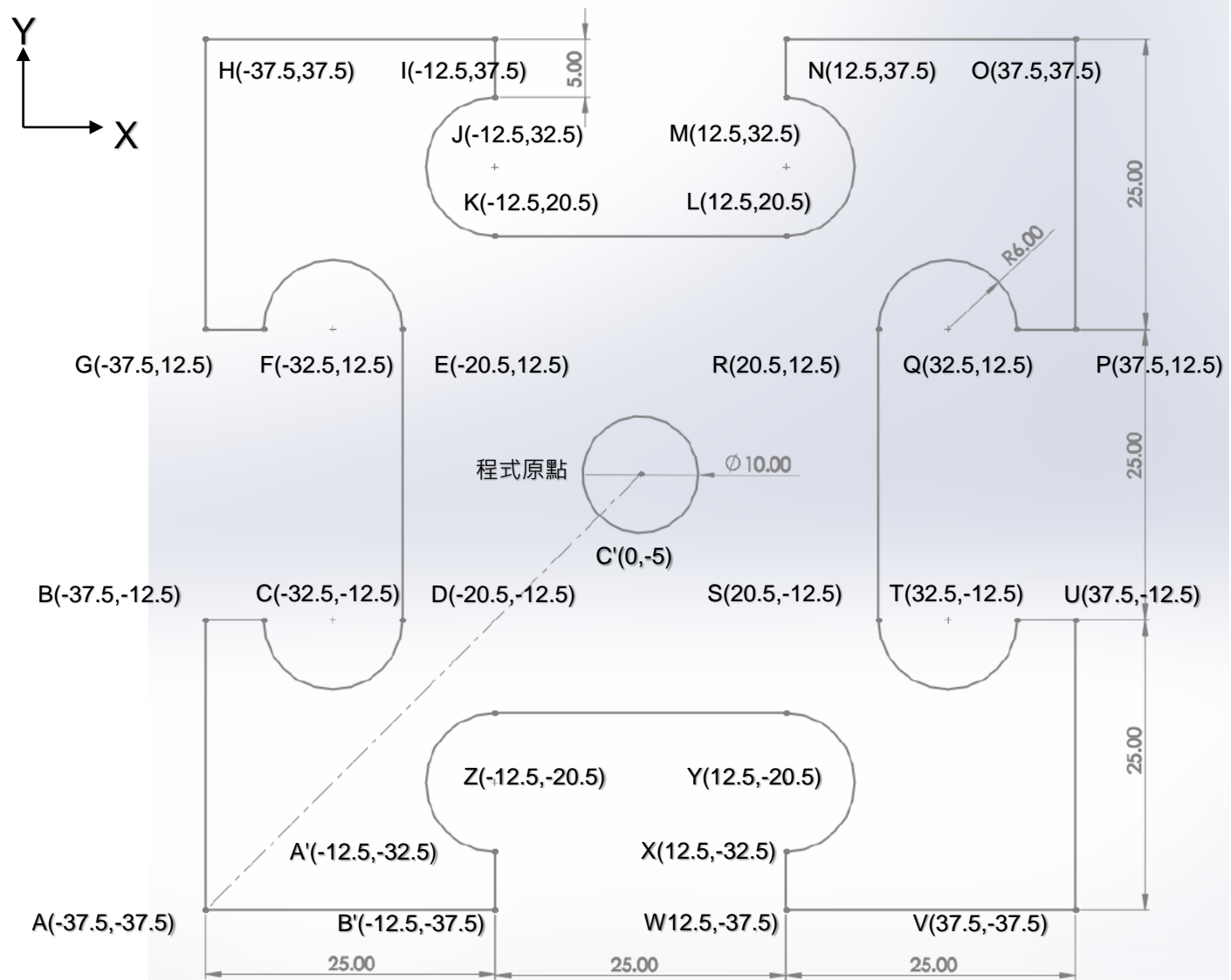
- G4 P0
- M05 S0
- G0 X0. Y0.

- **M05 S0**
- **G0 X0. Y-5.**
- **G4 P0**
- **M03 S255**
- **G4 P0**
- **G1 F600**

– 紅色標示處可以合併，並非一定要快速定位回程式原點才可進行下一流程，但撰寫時分開較方便檢查(下個例題會示範合併)

– 由於此題型為兩個圖形組合，在第一個圖形完成後已關閉雷射，故下一圖形開始必須重新設定加工參數。

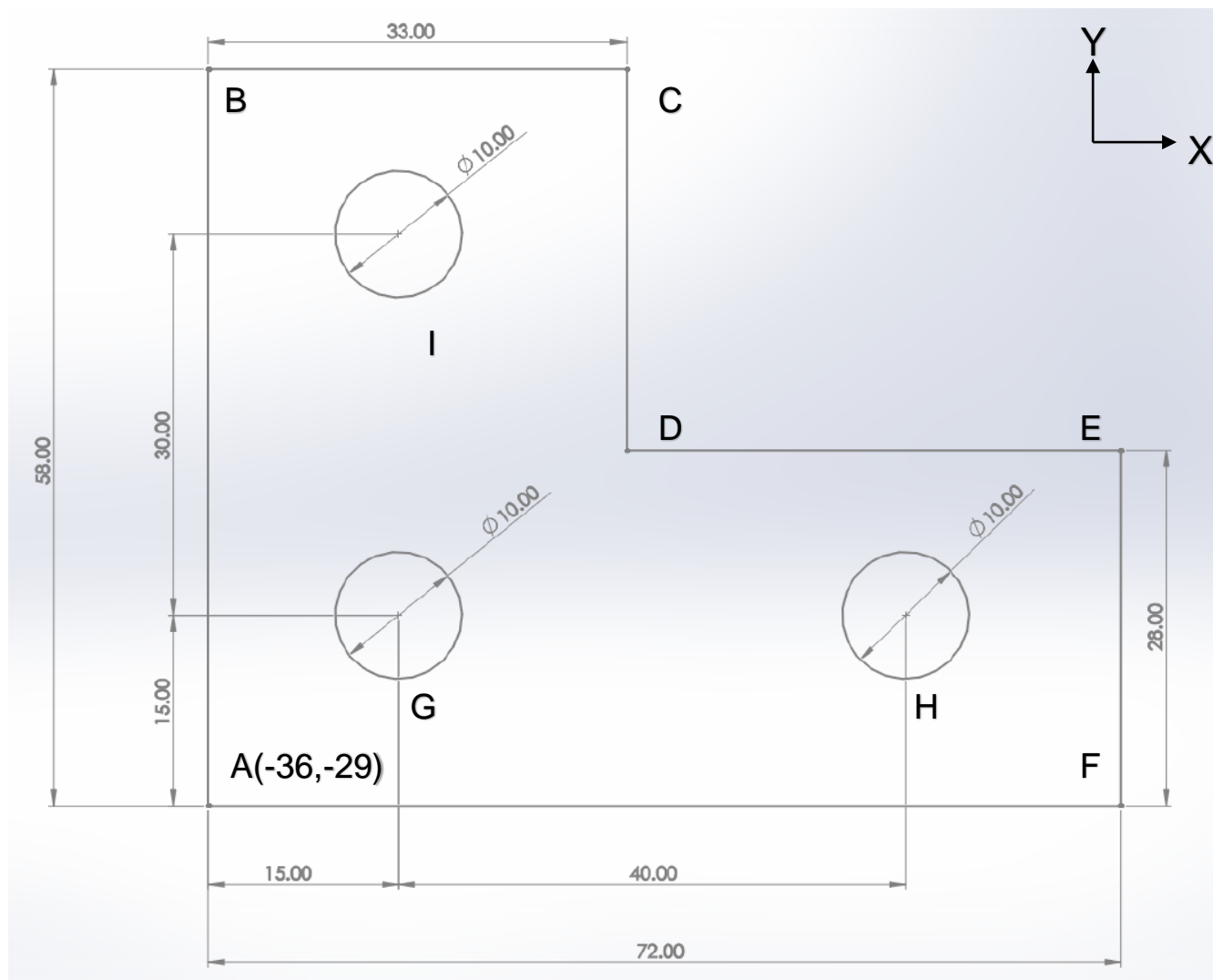
- G3 X0. Y-5. I0. J5.
- G4 P0
- M05 S0
- G0 X0 Y0
- M18



- 當題型為多個圖形組合，在上一個圖形完成後會輸入關閉雷射指令，故下一圖形開始必須重新設定加工參數。
- 若題型為多個圖形組合，請使用絕對座標(G90)撰寫程式，Cubbi在使用相對座標(G91)加工多圖形(2個以上)組合時，較容易發生失誤，故建議使用者盡量使用絕對座標加工(僅限Cubiio)。

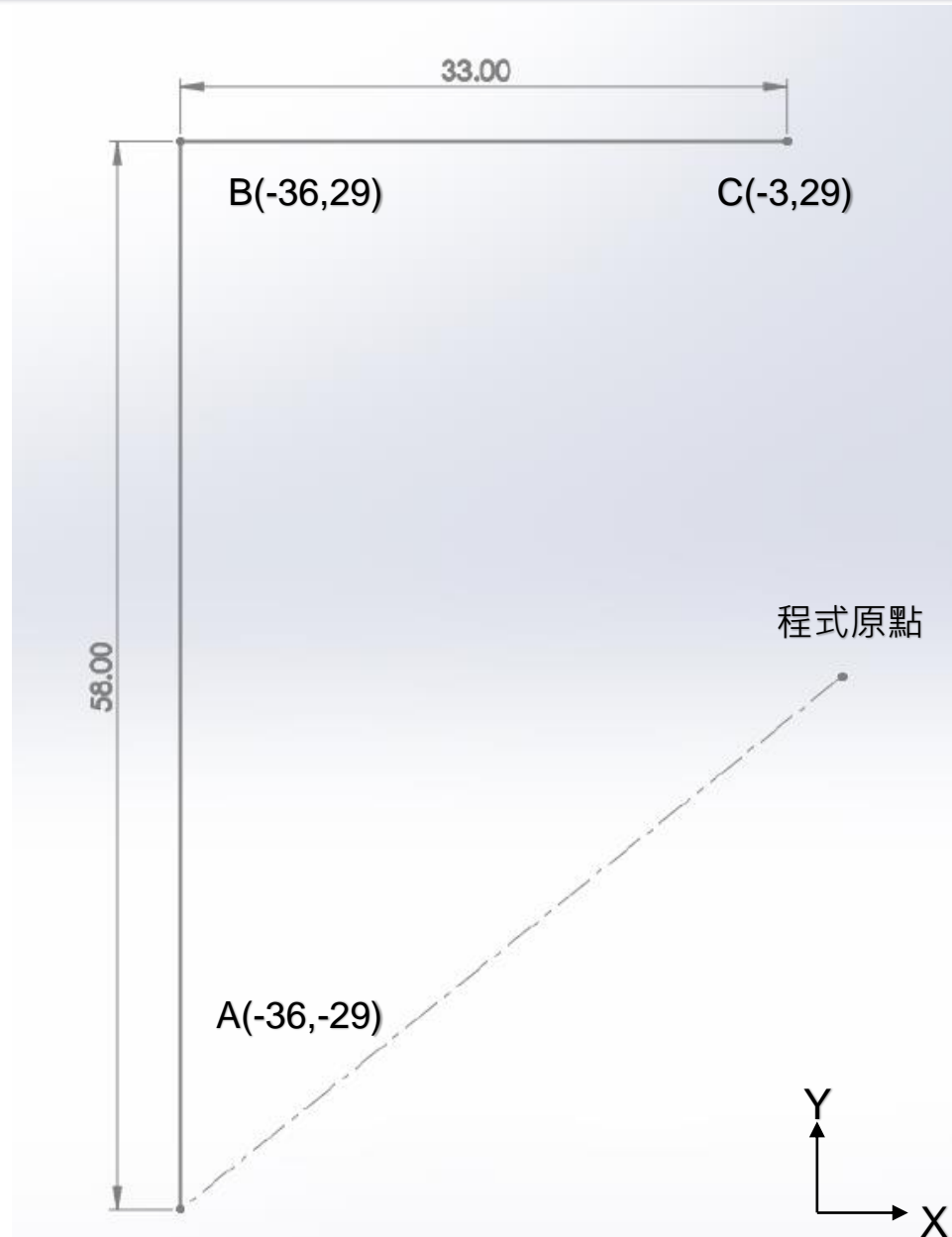
## 程式編輯 例題8

- 如圖所示，請用程式指令完成下方圖形輪廓，假設雷射起點在程式原點(0,0)上，請使用絕對座標完成下方圖形。

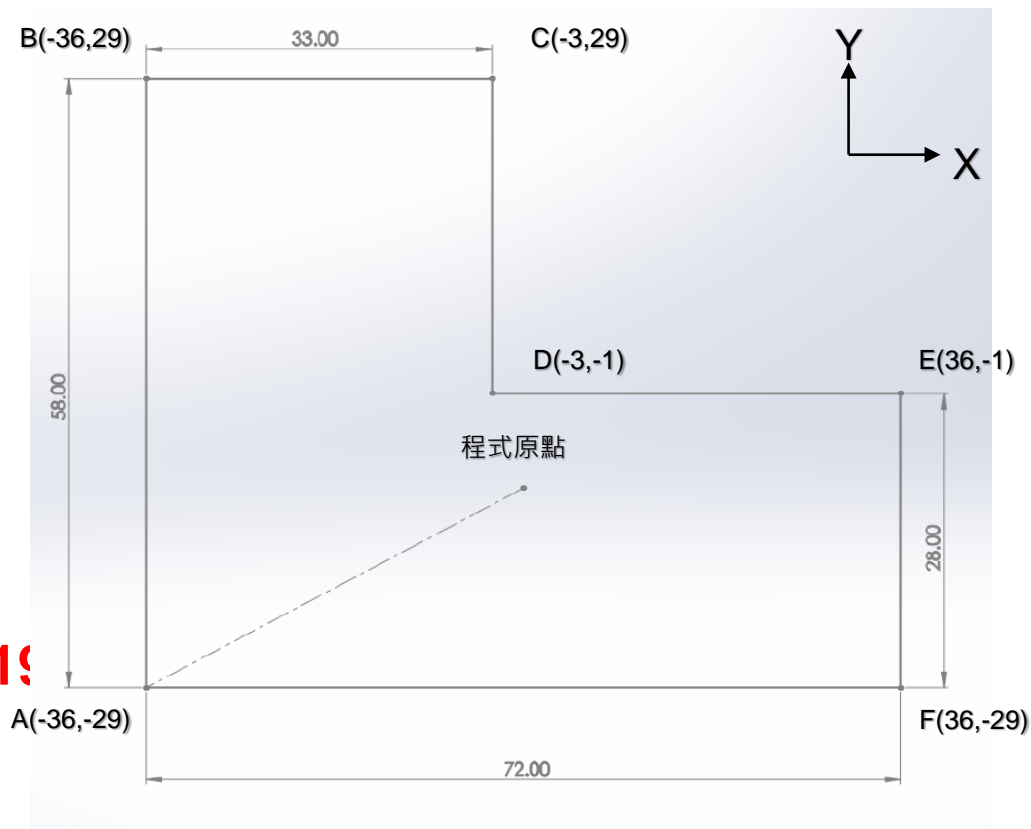


## 絕對座標 (G90)

- M05 S0
- G90
- G21
- G1 F600
- G0 X-36. Y-29.
- G4 P0
- M03 S255
- G4 P0
- G1 F600
- G1 X-36. Y29.
- G1 X-3. Y29.



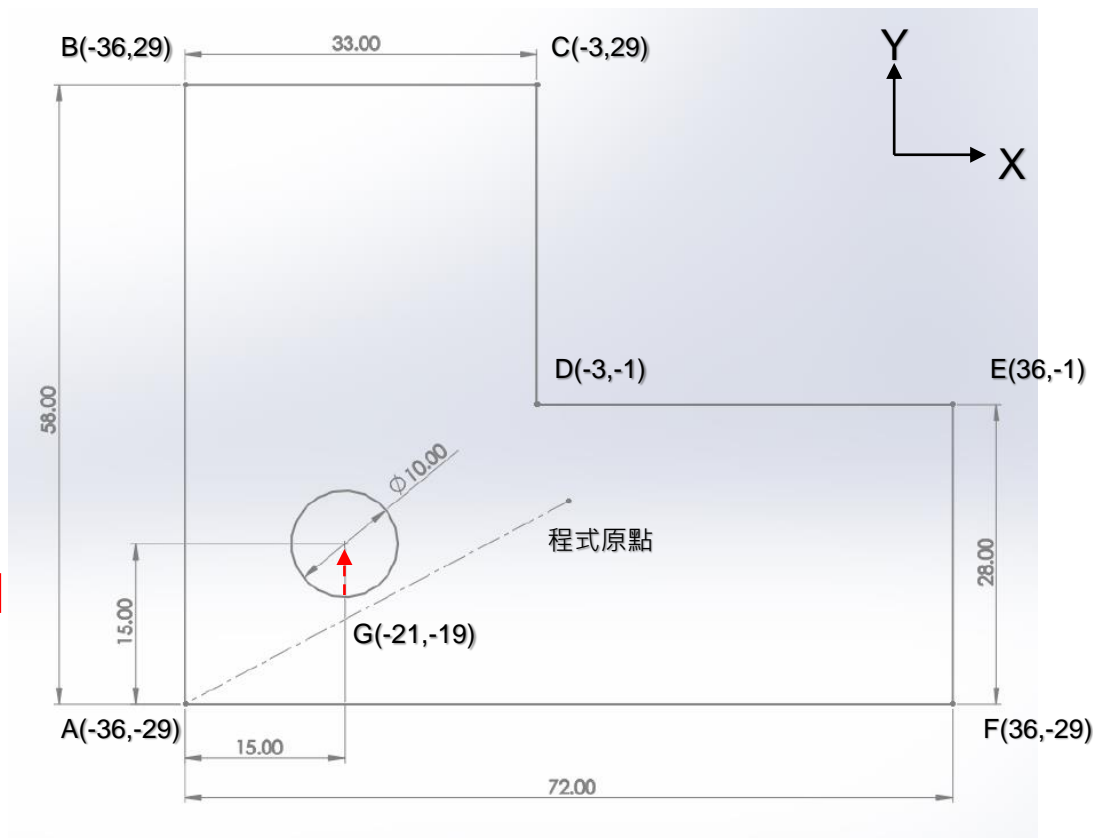
- G1 X-3. Y-1.
- G1 X36. Y-1.
- G1 X36. Y-29.
- G1 X-36. Y-29.



- G4 P0
- M05 S0
- G0 X-21. Y-19
- G4 P0

- M03 S255
- G4 P0
- G3 X-21. Y-19. I0. J5.
- G4 P0

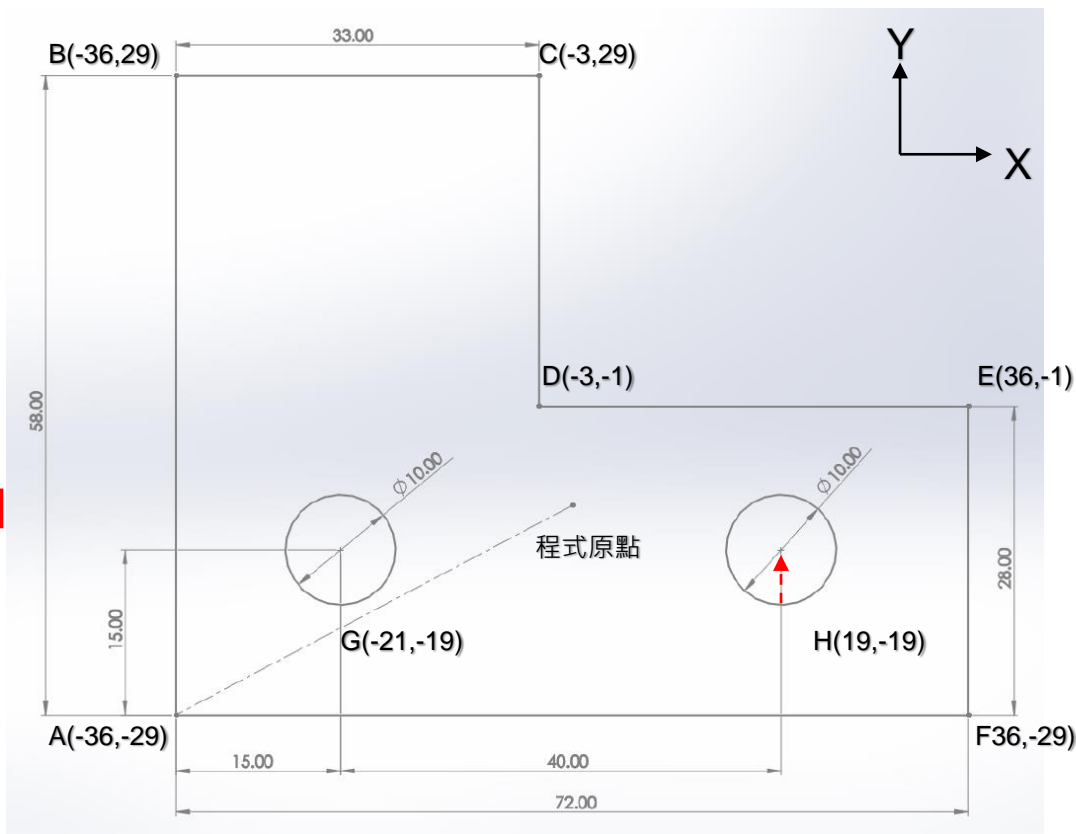
- M05 S0
- G0 X-21. Y1
- G4 P0
- M03 S255





- G4 P0
- G3 X-21. Y11. I0. J5.
- G4 P0
- M05 S0

- G0 X19. Y-1
- G4 P0
- M03 S255
- G4 P0

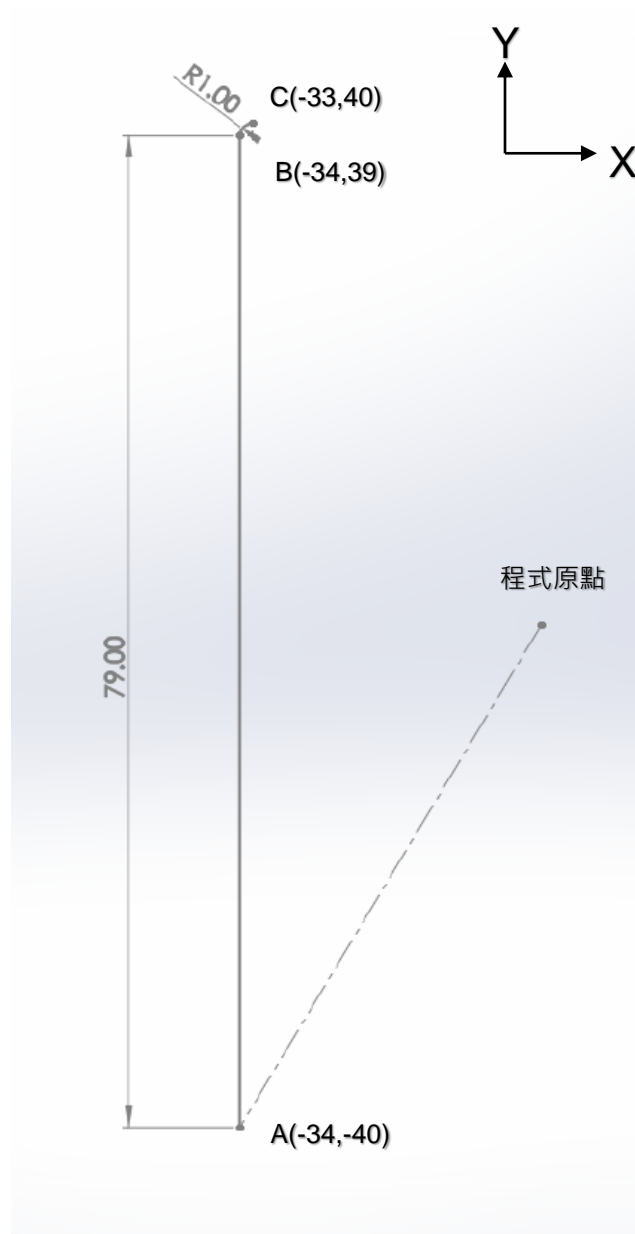




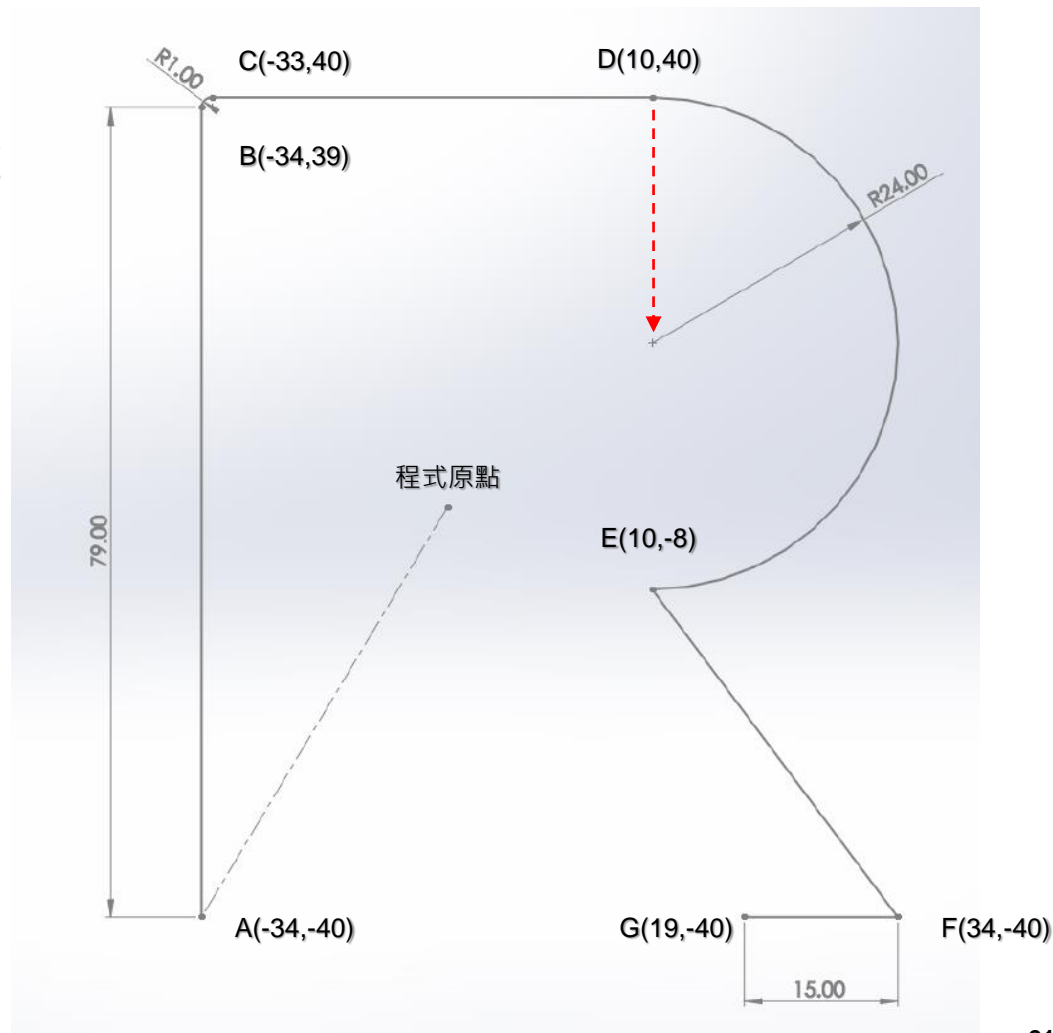
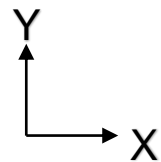
- 
- Technical drawing of a mechanical part with dimensions and labels. The drawing includes a coordinate system with X and Y axes. Key dimensions and labels are as follows:
- Overall Dimensions:**
    - Total height: 79.00
    - Total width: 32.00
  - Internal Features and Dimensions:**
    - Top-left corner: R1.00
    - Top-right corner: R12.00
    - Bottom-right corner: R24.00
    - Internal vertical dimension: 12.00
    - Internal vertical dimension: 24.00
    - Internal horizontal dimension: 17.00
    - Internal vertical dimension: 32.00
    - Internal horizontal dimension: 12.00
    - Internal horizontal dimension: 24.00
    - Internal horizontal dimension: 15.00
    - Internal vertical dimension: 12.00
  - Labels:** A, B, C, D, E, F, G, H, I, J, K, L, M, N.

## 絕對座標 (G90)

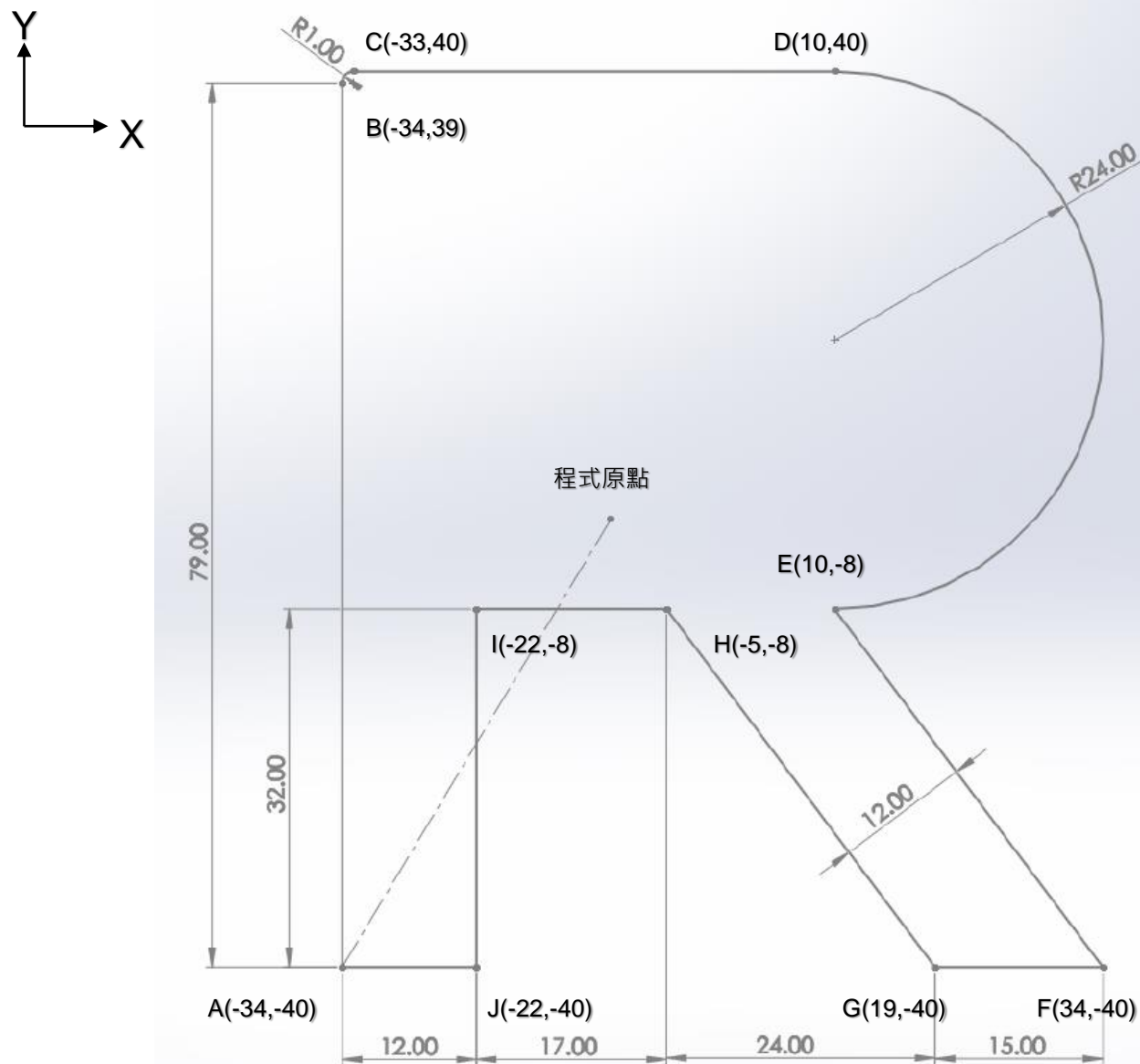
- M05 S0
- G90
- G21
- G1 F600
- G0 X-34. Y-40.
- G4 P0
- M03 S255
- G4 P0
- G1 F600
- G1 X-34. Y39.
- G2 X-33. Y40. I1. J0.



- G1 X10. Y40.
- G2 X10. Y-8. I0. J-24.
- G1 X34. Y-40.
- G1 X19. Y-40.



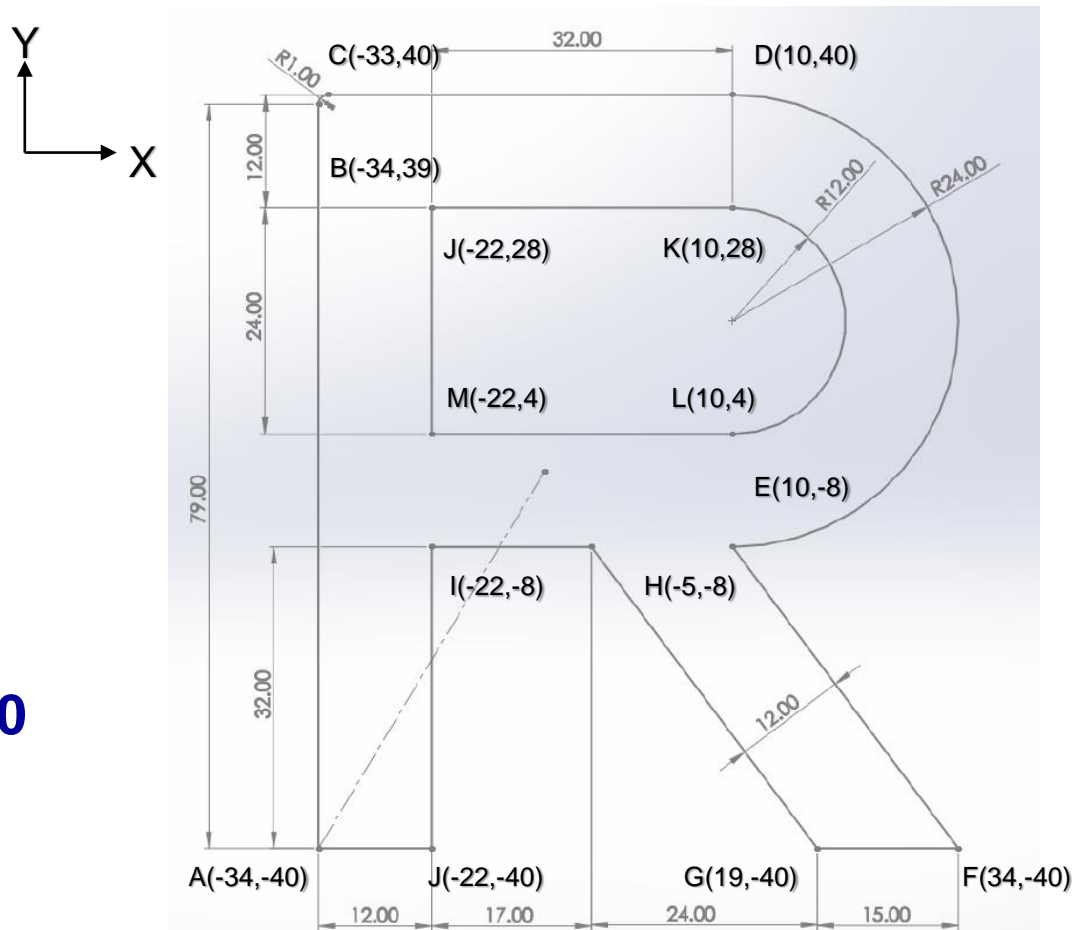
- G1 X-5. Y-8.
- G1 X-22. Y-8.
- G1 X-22. Y-40.
- G1 X-34. Y-40.





- G1 X-22. Y4.
- G1 X-22. Y28.
- G4 P0

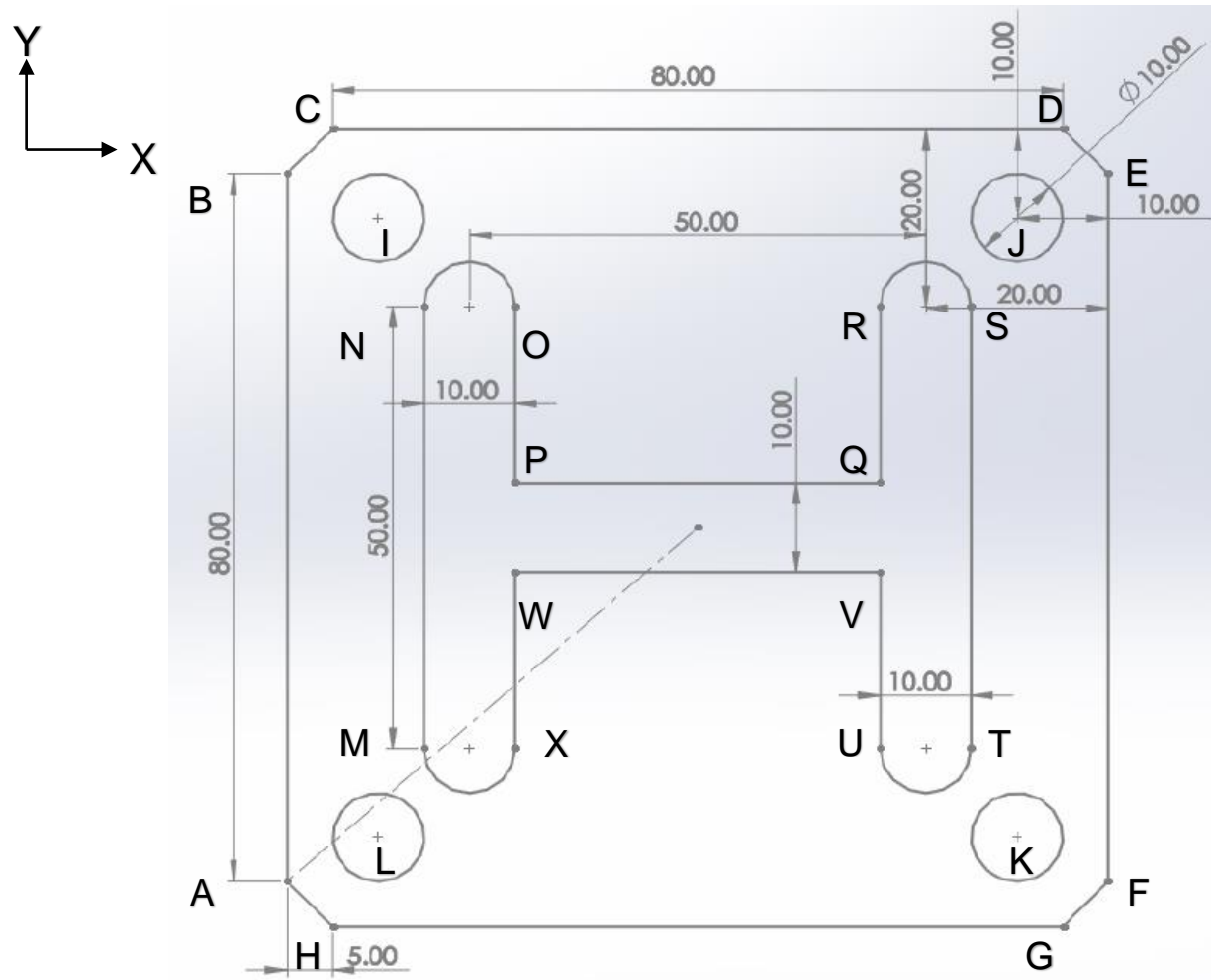
- M05 S0
- G0 X0 Y0
- M18





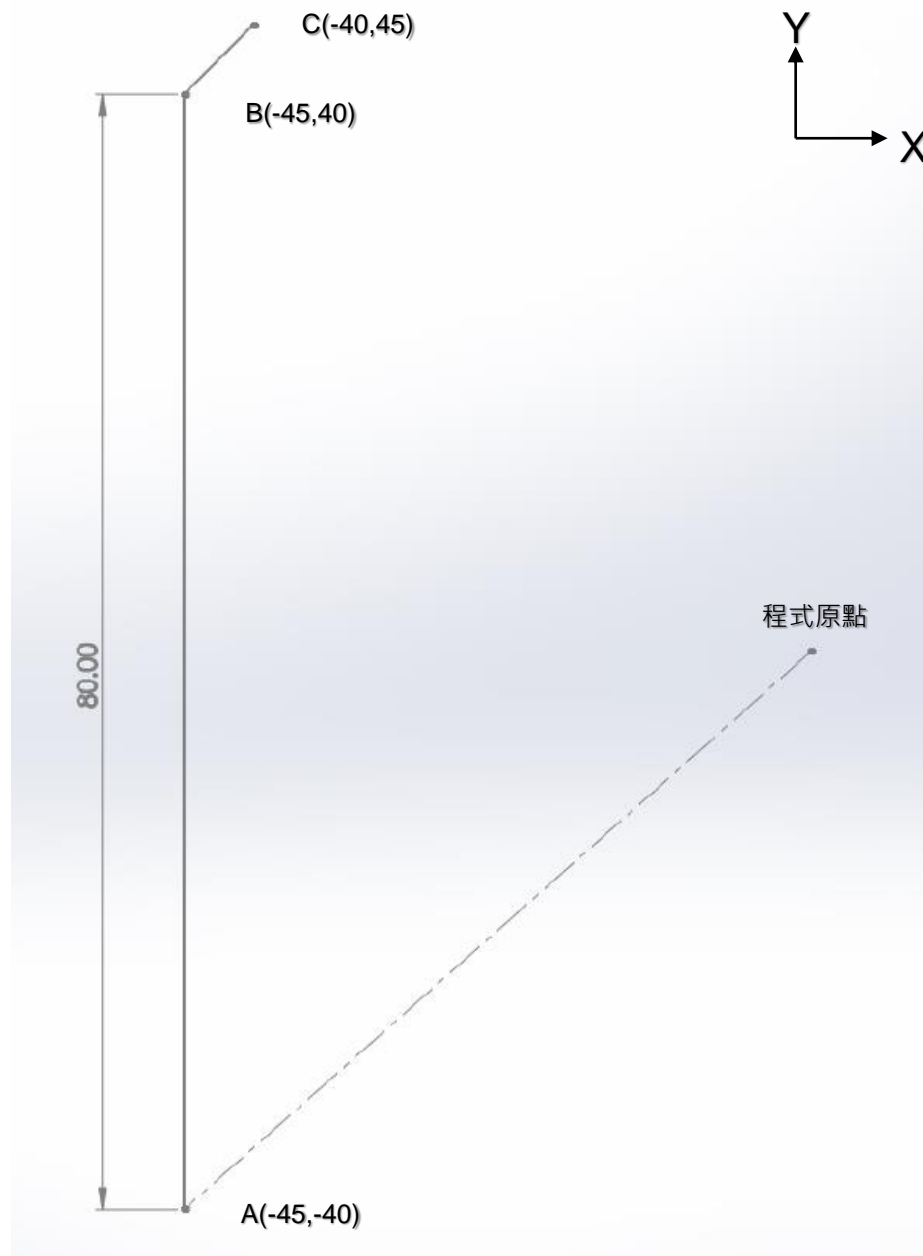
## 程式編輯 例題10

- 如圖所示，請用程式指令完成下方圖形輪廓，假設雷射起點在程式原點(0,0)上，請使用絕對座標完成下方圖形。

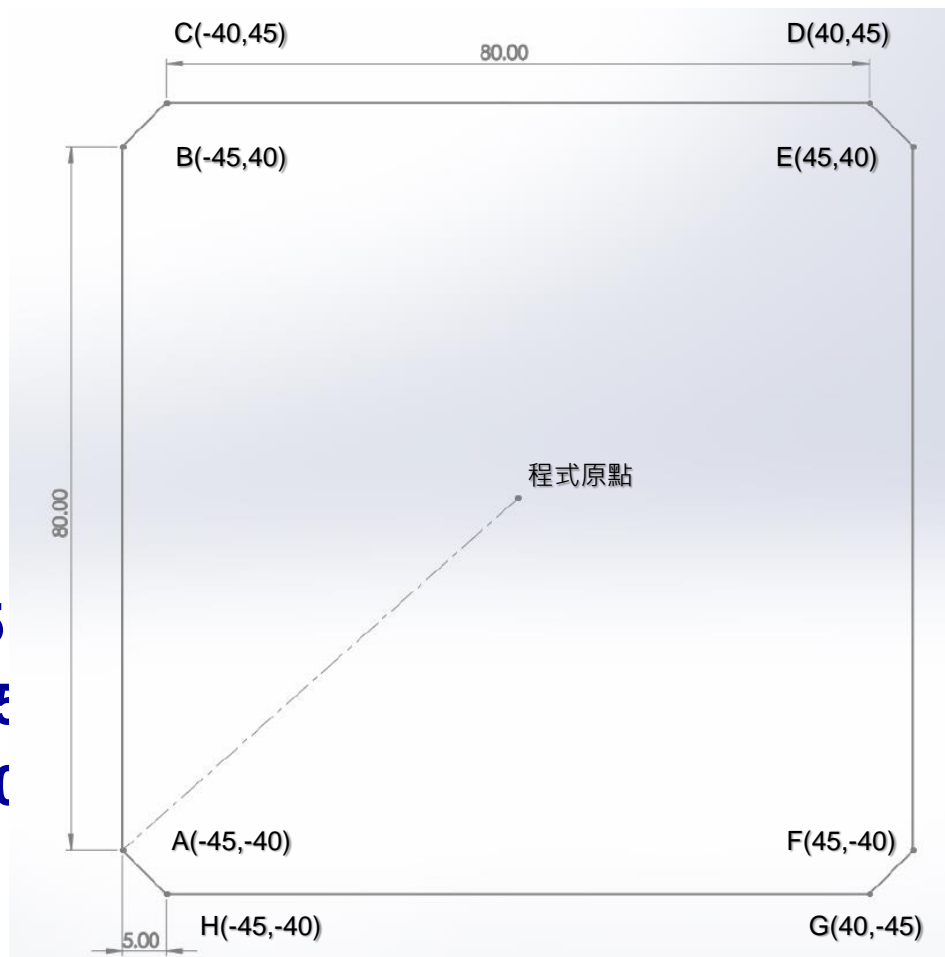
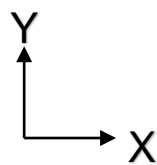


## 絕對座標 (G90)

- M05 S0
- G90
- G21
- G1 F600
- G0 X-45. Y-40.
- G4 P0
- M03 S255
- G4 P0
- G1 F600
- G1 X-45. Y40.
- G1 X-40. Y45.

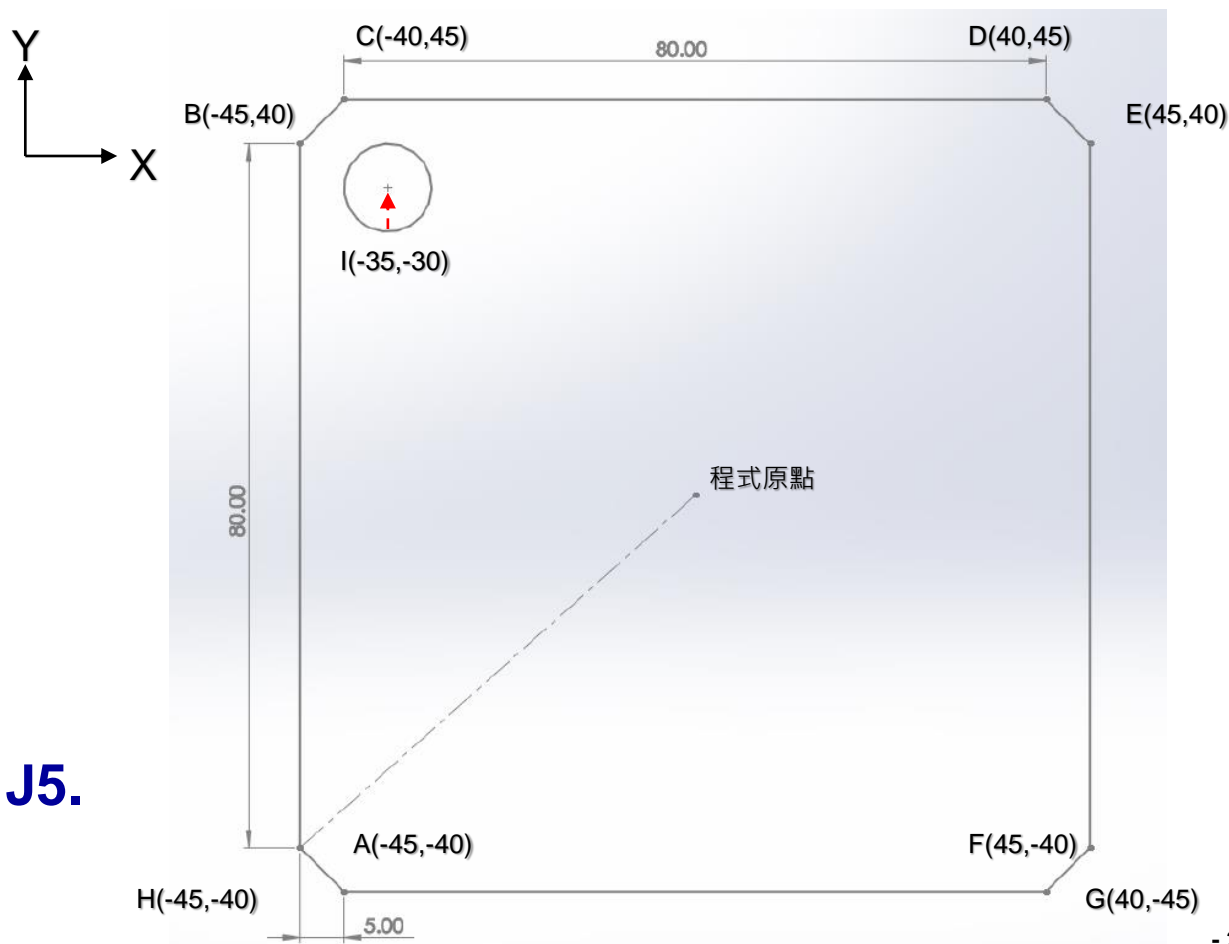


- G1 X40. Y45.
- G1 X45. Y40.
- G1 X45. Y-40.



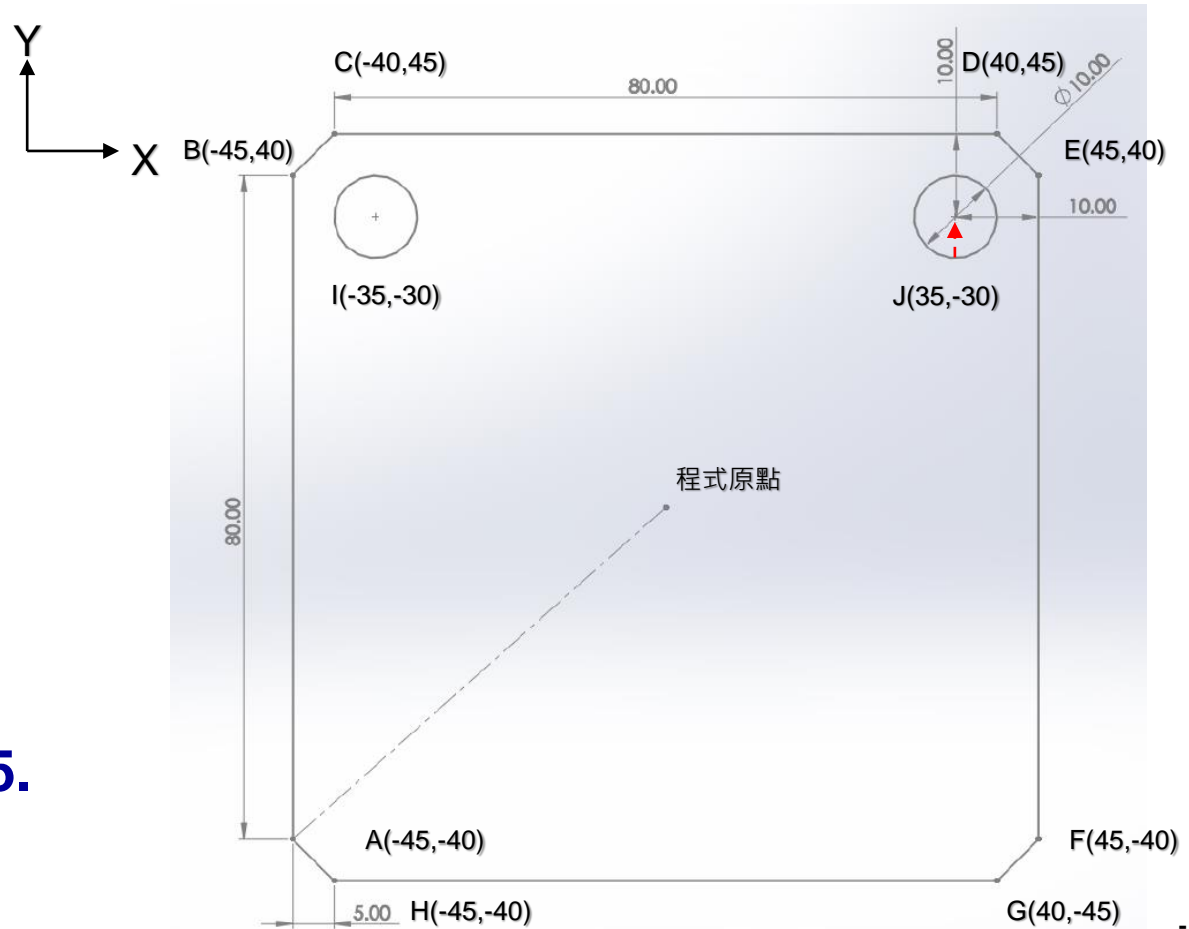
- G1 X40. Y-45
- G1 X-40. Y-45
- G1 X-45. Y-40

- G4 P0
- M05 S0
- G0 X-35. Y30.
- G4 P0



- M03 S255
- G4 P0
- G3 X-35. Y30. I0. J5.

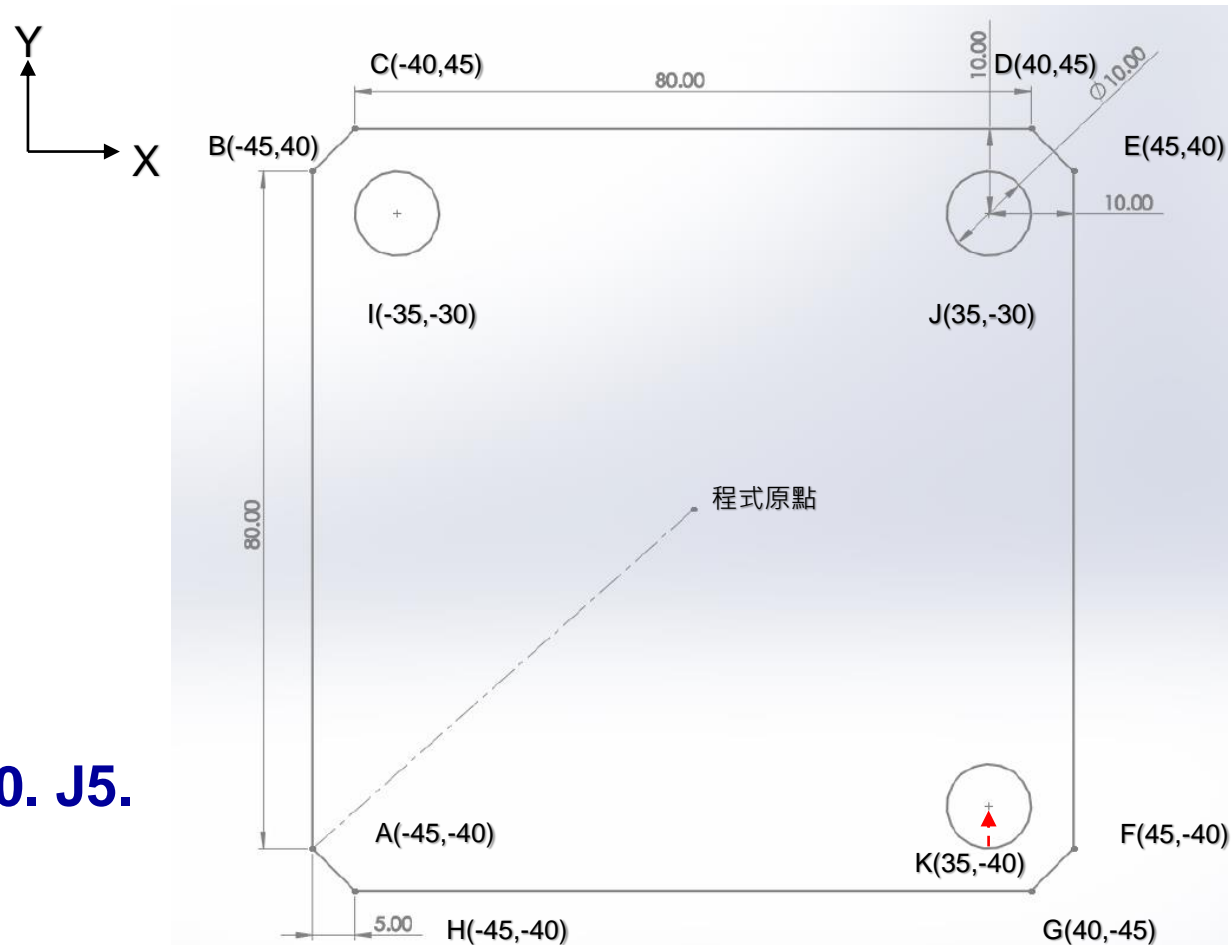
- G4 P0
- M05 S0
- G0 X35. Y30.
- G4 P0



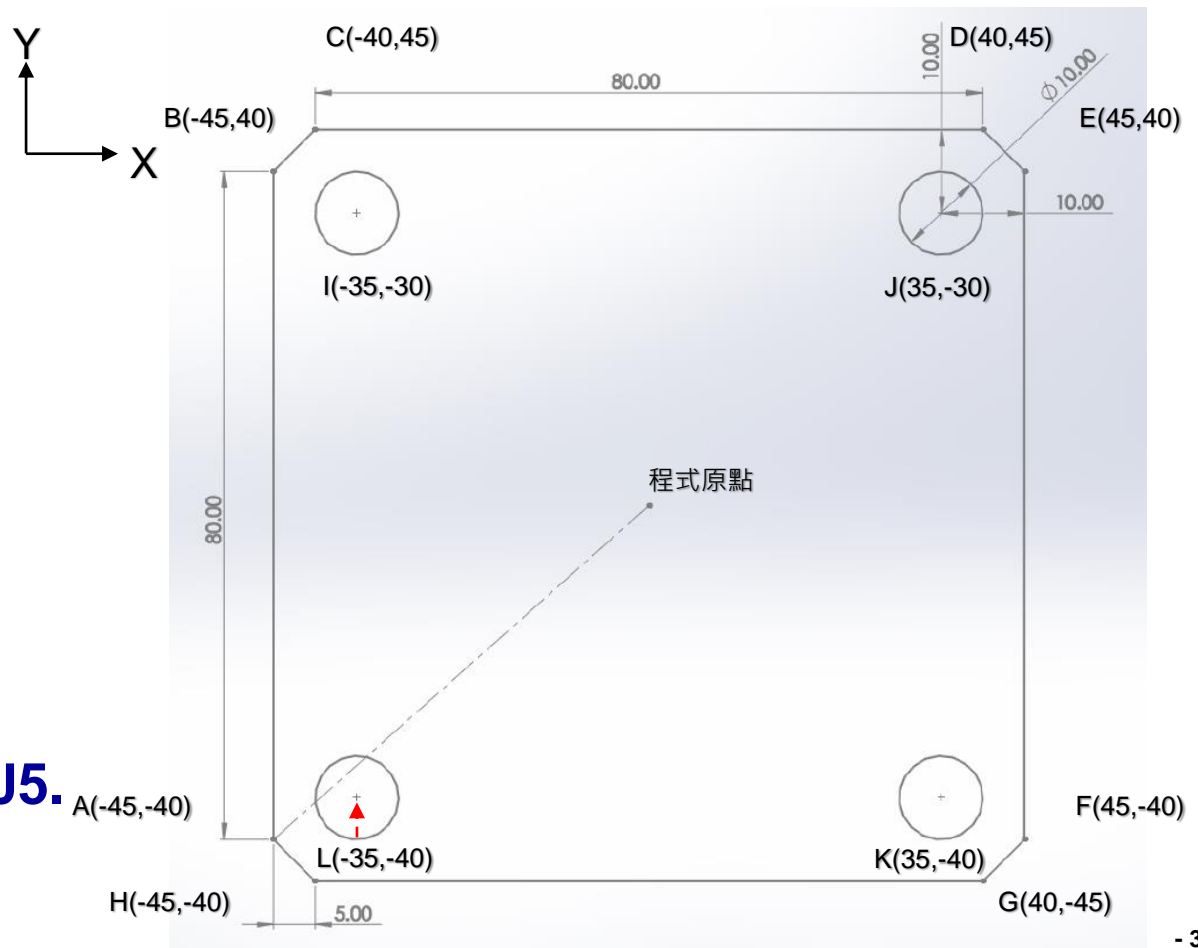
- M03 S255
- G4 P0
- G3 X35. Y30. I0. J5.

- G4 P0
- M05 S0
- G0 X35. Y-40.
- G4 P0

- M03 S255
- G4 P0
- G3 X35. Y-40. I0. J5.



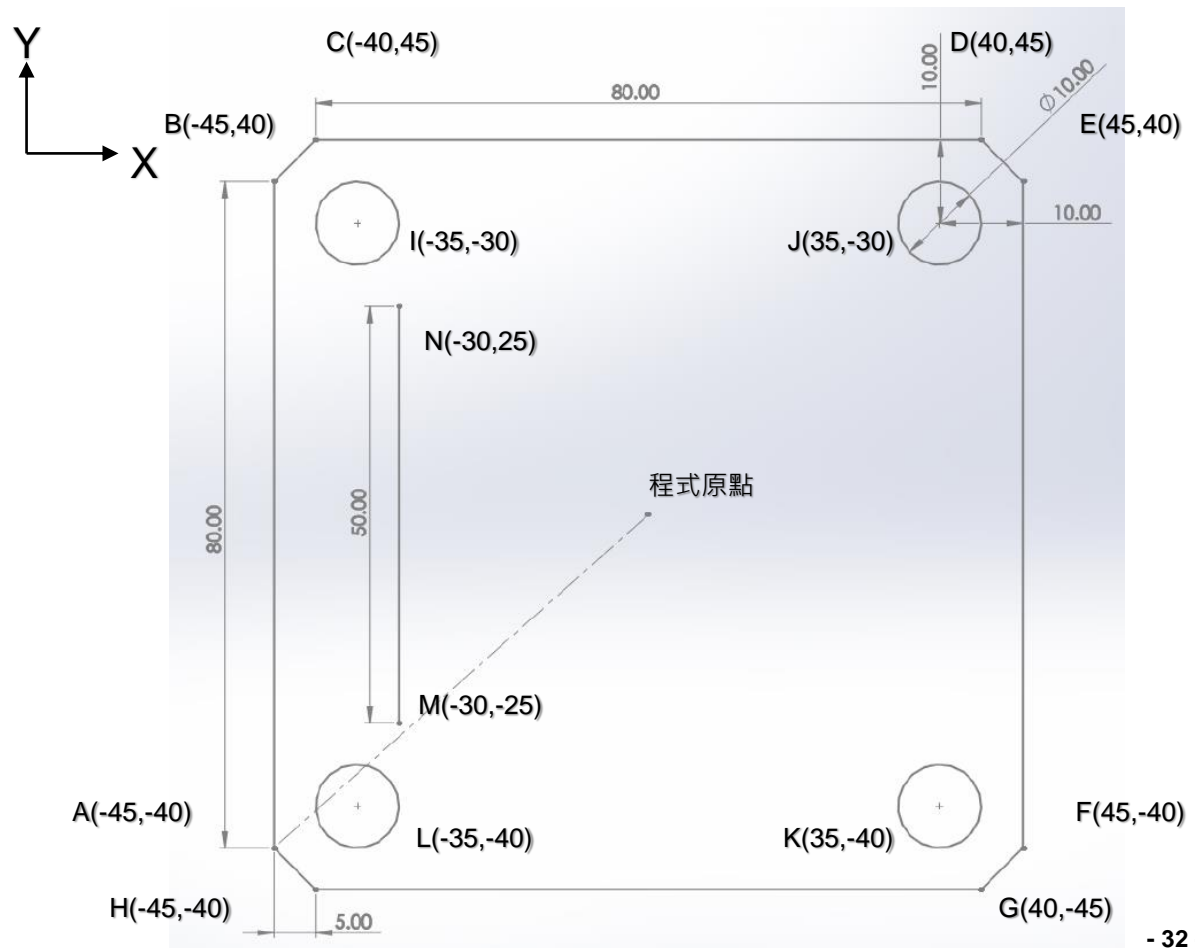
- G4 P0
- M05 S0
- G0 X-35. Y-40.
- G4 P0



- M03 S255
- G4 P0
- G3 X-35. Y-40. I0. J5.

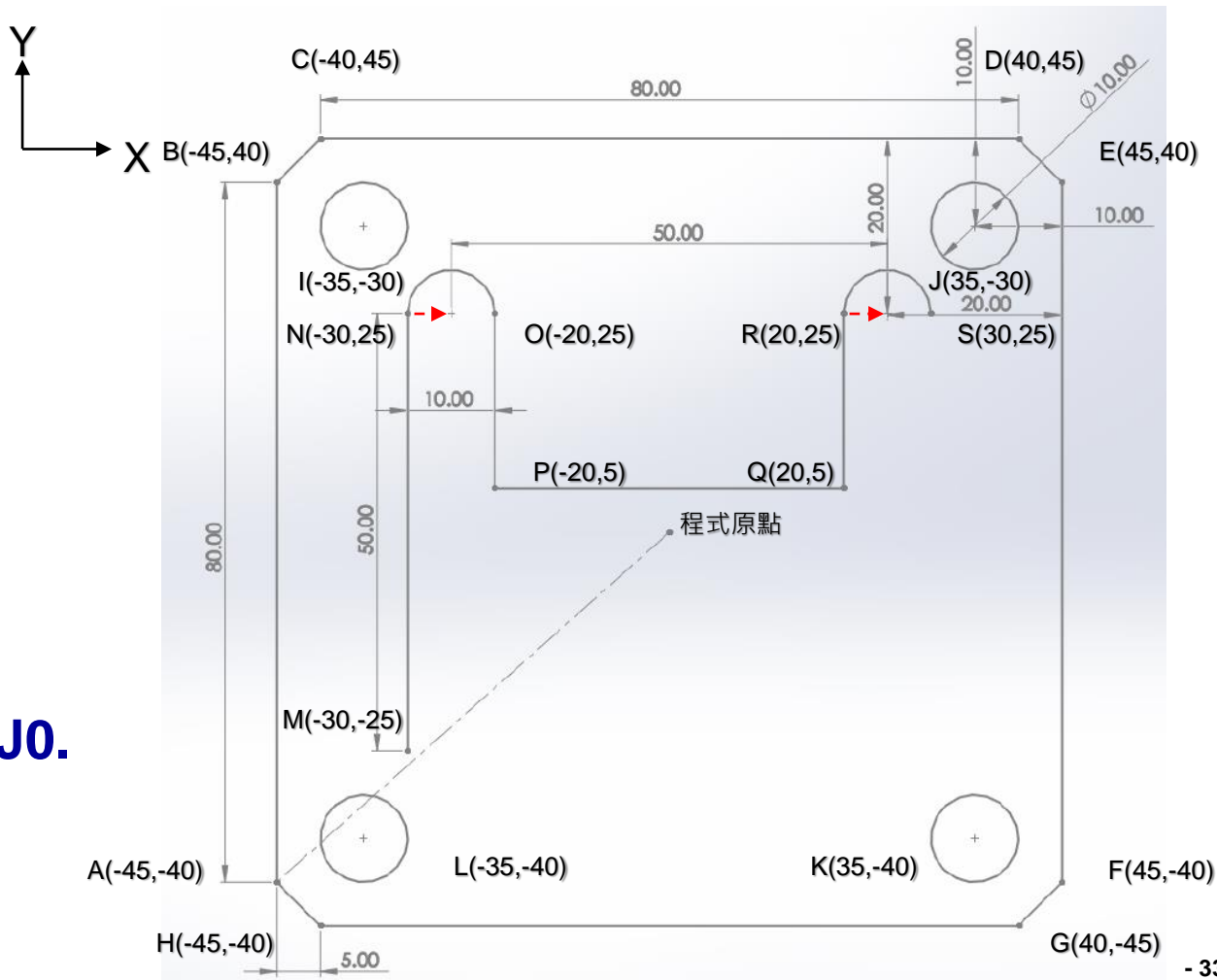
- G4 P0
- M05 S0
- G0 X-30. Y-25.
- G4 P0

- M03 S255
- G4 P0
- G1 X-30. Y25.





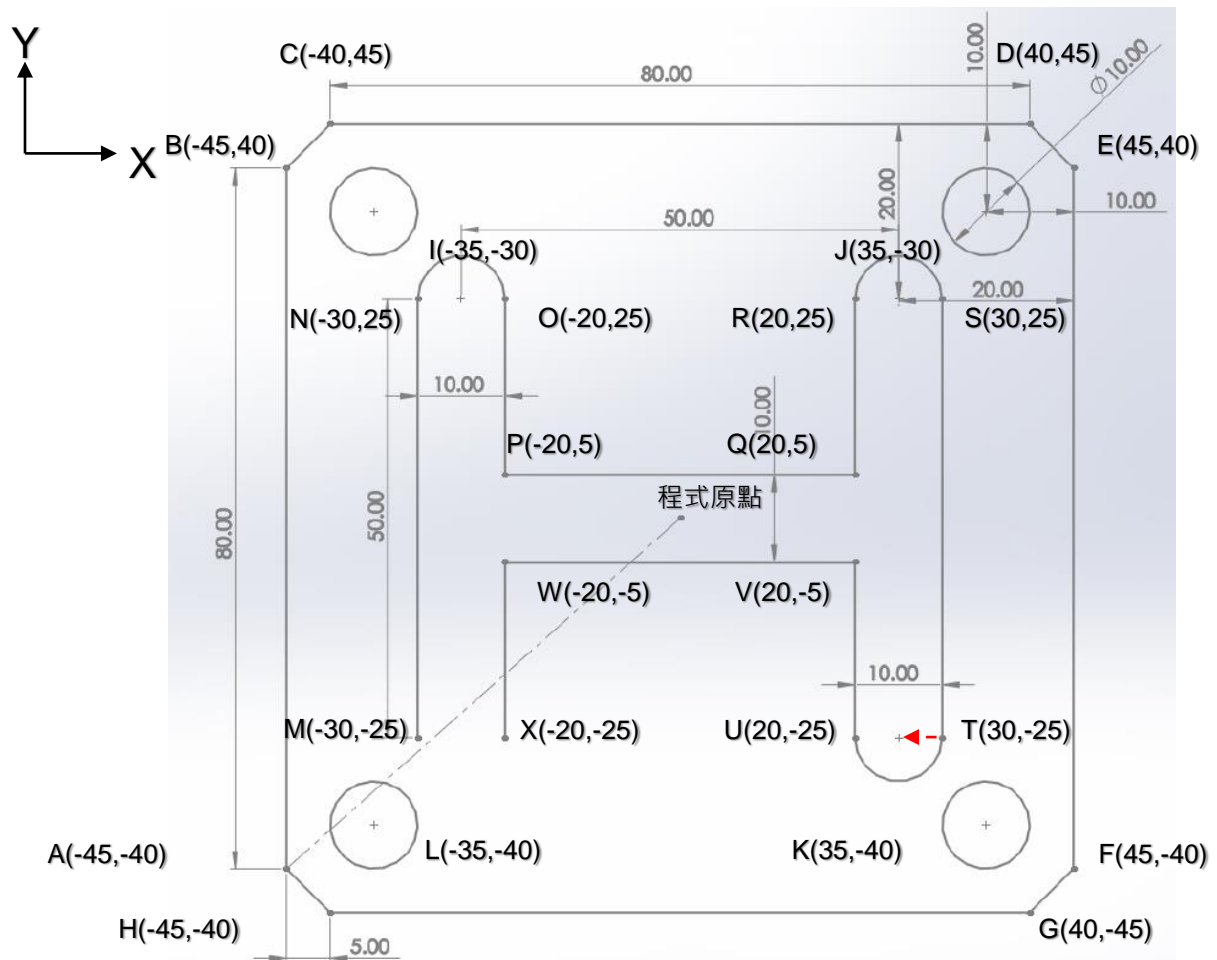
- G2 X-20. Y25. I5. J0.
- G1 X-20. Y5.
- G1 X20. Y5.



- G1 X20. Y25.
- G2 X30. Y25. I5. J0.

- G1 X30. Y-25.
- G2 X20. Y-25. I-5. J0.
- G1 X20. Y-5.

- G1 X-20. Y-5.
- G1 X-20. Y-25.





END