

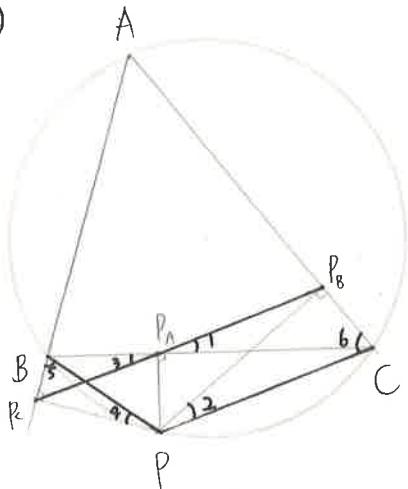
# 北一女中 107 學年度《數戰數決》有獎徵答活動

班別： 一年 恭 班 座號： 20 號 姓名： 黃郁琇

題號： 5-5 頁碼/總頁數： \_\_\_\_\_ (如果一題只有一頁，可不填)

(請不要將兩題的解答寫在同一張答案紙，一題的解答也不要寫在同一張答案紙的正反面。)

(1)



$$\because \angle PPA_C = \angle PP_B C = 90^\circ$$

$\therefore P, P_A, P_B, C$  四點共圓

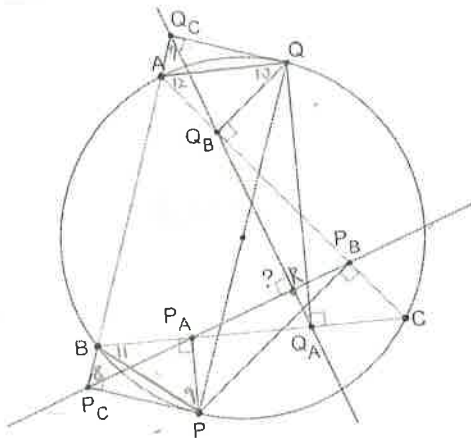
則  $\angle 1 = \angle 2$  (等角對等弧)

同理,  $\angle 3 = \angle 4, \angle 5 = \angle 6$

$$\angle 1 = \angle 2 = 90^\circ - \angle 6 = 90^\circ - \angle 5 = \angle 4 = \angle 3$$

即  $P_C, P_A, P_B$  三點共線 得證

(2)



$\therefore Q, Q_B, A, Q_C$  四點共圓

$$\therefore \angle 7 = \angle 10 \quad \text{同理} \quad \angle 8 = \angle 9$$

$$\text{又} \angle 9 = 90^\circ - \angle 11, \quad \angle 10 = 90^\circ - \angle 12$$

$$\angle 11 = \frac{\widehat{P_C}}{2}, \quad \angle 12 = \frac{\widehat{Q_C}}{2}$$

$$\begin{aligned} \angle 7 + \angle 8 &= \angle 9 + \angle 10 = 180^\circ - (\angle 11 + \angle 12) \\ &= 180^\circ - \frac{\widehat{P_C} + \widehat{Q_C}}{2} \\ &= 180^\circ - 90^\circ \quad (PQ \text{ 為直徑}) \\ &= 90^\circ \end{aligned}$$

$$\angle P_C R Q_C = 180^\circ - (\angle 7 + \angle 8) = 90^\circ$$

得證  $L_P \perp L_a$