

北一女中 104 學年度《數戰數決》有獎徵答活動

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題號：5-5 頁碼/總頁數：_____ (如果只有一頁，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。)

$$x^2 + xy + y^2 + 3x + 6y + 6 = 0$$

$$4x^2 + 4xy + 4y^2 + 12x + 24y + 24 = 0$$

$$(2x+y+3)^2 + 3(y+3)^2 = 12$$

$$\text{又 } x, y \in \mathbb{Z} \Rightarrow (2x+y+3), (y+3) \in \mathbb{Z}$$

$$\Rightarrow |y+3| = 1 \text{ or } 2, y+3 = \pm 1 \text{ or } \pm 2$$

$$\langle \text{Case 1} \rangle y+3=1, 2x+y+3=\pm 3 \Rightarrow (x, y) = (1, -2) \text{ or } (-2, -2)$$

$$\langle \text{Case 2} \rangle y+3=-1, 2x+y+3=\pm 3 \Rightarrow (x, y) = (2, -4) \text{ or } (-1, -4)$$

$$\langle \text{Case 3} \rangle y+3=2, 2x+y+3=0 \Rightarrow (x, y) = (-1, -1)$$

$$\langle \text{Case 4} \rangle y+3=-2, 2x+y+3=0 \Rightarrow (x, y) = (1, -5)$$

$$\Rightarrow (x, y) = (1, -2), (-2, -2), (2, -4), (-1, -4), (-1, -1), (1, -5) \#$$