

NAME: _____ Score _____/5

1. Solve the system using the orderly write-up suggested.

$$\left\{ \begin{array}{l} x - y = 3 \\ (x - 2)^2 + (y + 3)^2 = 4 \end{array} \right. \longrightarrow \left\{ \begin{array}{l} x = y + 3 \\ (x - 2)^2 + (y + 3)^2 = 4 \end{array} \right.$$

$$\longrightarrow \left\{ \begin{array}{l} x = y + 3 \\ (y + 1)^2 + (y + 3)^2 = 4 \end{array} \right. \longrightarrow \left\{ \begin{array}{l} x = y + 3 \\ y^2 + 2y + 1 + y^2 + 6y + 9 = 4 \end{array} \right.$$

$$\longrightarrow \left\{ \begin{array}{l} x = y + 3 \\ 2y^2 + 8y + 6 = 0 \end{array} \right. \longrightarrow \left\{ \begin{array}{l} x = y + 3 \\ y^2 + 4y + 3 = 0 \end{array} \right.$$

$$\longrightarrow \left\{ \begin{array}{l} x = y + 3 \\ (y + 3)(y + 1) = 0 \end{array} \right. \longrightarrow \left\{ \begin{array}{l} x = y + 3 \\ y = -3 \text{ OR } y = -1 \end{array} \right.$$

$$\longrightarrow \left\{ \begin{array}{l} x = 0 \text{ OR } x = 2 \\ y = -3 \text{ OR } y = -1 \end{array} \right.$$

The solution set is $\{(0, -3), (2, -1)\}$