

Notes:

### SIMULTANEOUS EQUATIONS 1

SOLVE

$$\textcircled{1} \quad y = 2x + 1$$

$$\textcircled{2} \quad y = 8 + x$$

1) SUB  $\textcircled{1} \rightarrow \textcircled{2}$  TO GET

$$8 + x = 2x + 1$$

2) COLLECT + SOLVE FOR  $x$

$$\underline{7 = x}$$

3) SUB.  $x=7$  INTO  $\textcircled{1}$  TO GET  $y$

$$\underline{y = 2 \times 7 + 1}$$
$$\underline{= 15}$$

### SIMULTANEOUS EQUATIONS 2

SOLVE

$$\textcircled{1} \quad 4x + 2y = 2$$

$$\textcircled{2} \quad x + y = 2$$

1) TIMES  $\textcircled{2}$  BY 4 TO GET  $\textcircled{3}$

$$\textcircled{3} \quad 4x + 4y = 8$$

2) TAKE  $\textcircled{1}$  FROM  $\textcircled{3}$

$$\textcircled{3} \quad 4x + 4y = 8$$

$$\textcircled{1} \quad 4x + 2y = 2$$

$$\underline{\textcircled{4} \quad 0 + 2y = 6}$$

3) SOLVE  $\textcircled{4}$  TO GET

$$\underline{y = 3}$$

4) SUB  $y=3$  BACK INTO  $\textcircled{2}$  TO GET  $x$

$$x + 3 = 2$$

$$\underline{x = -1}$$

### SIMULTANEOUS EQUATIONS 3

SOLVE

$$\textcircled{1} \quad y = x + 5$$

$$\textcircled{2} \quad y = x^2 + 3$$

1) SUB  $\textcircled{1}$  INTO  $\textcircled{2}$  TO GET

$$x + 5 = x^2 + 3$$

2) REARRANGE TO GET

$$0 = x^2 - x - 2$$

$$= (x + 1)(x - 2)$$

3) SOLVE FOR  $x$

$$x = -1 \text{ OR } x = 2$$

4) SUB  $x=-1$  THEN  $x=2$  INTO  $\textcircled{1}$  TO GET  $y$

$$y = -1 + 5$$
$$\underline{= 4}$$

$$y = 2 + 5$$
$$\underline{= 7}$$

5) SOLUTIONS ARE

$$\underline{(-1, 4) \text{ AND } (2, 7)}$$

Comments: