

1. Solve the simultaneous equations

$$3x + 2y = 4 \quad \times 4$$

$$4x + 5y = 17 \quad \times 3$$

$$\begin{array}{r} 12x + 8y = 16 \\ - 12x + 15y = 51 \\ \hline 7y = 35 \end{array}$$

$$y = 5$$

$$3x + 2(5) = 4$$

$$3x + 10 = 4$$

$$3x = -6$$

$$x = -2$$

$$x = \dots \underline{-2} \dots$$
$$y = \dots \underline{5} \dots$$

(4 marks)

2. Solve the equations

$$\begin{array}{rcl} 3x + 5y = 19 & & \times 4 \\ 4x - 2y = -18 & & \times 3 \end{array}$$

$$\begin{array}{rcl} 12x + 20y = 76 \\ 12x - 6y = -54 \end{array}$$

$$26y = 130$$

$$y = 5$$

$$3x + 5(5) = 19$$

$$\begin{array}{rcl} 3x + 25 & = 19 \\ 3x & = -6 \\ x & = -2 \end{array}$$

$$x = \dots \underline{-2} \dots$$

$$y = \dots \underline{5} \dots$$

(4 marks)

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3. Solve the simultaneous equations

$$\begin{array}{rcl} 3x + 4y = 200 & \times 2 \\ 2x + 3y = 144 & \times 3 \end{array}$$

$$\begin{array}{r} 6x + 8y = 400 \\ - \\ 6x + 9y = 432 \\ \hline y = 32 \end{array}$$

$$3x + 4(32) = 200$$

$$3x + 128 = 200$$

$$3x = 72$$

$$x = 24$$

$$x = \dots \underline{24}$$

$$y = \dots \underline{32}$$

(4 marks)

4. Solve the simultaneous equations

$$5x + 2y = 11 \quad \times 3$$

$$4x - 3y = 18 \quad \times 2$$

$$\begin{array}{r} 15x + 6y = 33 \\ + \quad + \quad + \\ 8x - 3y = 36 \end{array}$$

$$23x = 69$$

$$x = 3$$

$$5(3) + 2y = 11$$

$$15 + 2y = 11$$

$$2y = -4$$

$$y = -2$$

3

$x = \dots$

$y = \underline{-2}$

(4 marks)

5. Solve the simultaneous equations

$$\begin{array}{rcl} 4x - 3y = 11 & \times 2 \\ 10x + 2y = -1 & \times 3 \end{array}$$

$$\begin{array}{rcl} 8x - 6y = 22 \\ + + \\ 30x + 6y = -3 \\ \hline 38x = 19 \\ x = 0.5 \end{array}$$

$$\begin{array}{rcl} 4(0.5) - 3y = 11 \\ 2 - 3y = 11 \\ 2 = 11 + 3y \\ -9 = 3y \\ -3 = y \end{array}$$

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$$\begin{array}{l} x = \dots \dots \dots \dots \\ y = \dots \dots \dots \dots \\ \text{(4 marks)} \end{array}$$

0.5  
-3

6. Solve the simultaneous equations

$$3x + 7y = 26 \quad \times 4$$

$$4x + 5y = 13 \quad \times 3$$

$$\begin{array}{r} 12x + 28y = 104 \\ 12x + 15y = 39 \\ \hline 13y = 65 \end{array}$$

$$y = 5$$

$$3x + 7(5) = 26$$

$$3x + 35 = 26$$

$$3x = -9$$

$$x = -3$$

$$\begin{aligned} x &= \dots \frac{-3}{5} \\ y &= \dots \end{aligned}$$

(4 marks)

7. Solve the simultaneous equations

$$6x - 2y = 33 \quad \times 2$$

$$4x + 3y = 9 \quad \times 3$$

$$\begin{array}{r} 12x - 4y = 66 \\ 12x + 9y = 27 \\ \hline 13y = -39 \end{array}$$

$$y = -3$$

$$4x + 3(-3) = 9$$

$$4x - 9 = 9$$

$$4x = 18$$

$$x = \frac{18}{4} = \frac{9}{2} = 4.5$$

$$x = \underline{\hspace{2cm}} \quad 4.5$$

$$y = \underline{\hspace{2cm}} \quad -3$$

(4 marks)