

Simultaneous Equations

ANSWERS

Calculator | 30 minutes | Total marks: 24

Name Class

1 Solve the simultaneous equations

$$x + y = 10$$

$$x - y = 4$$

$$2x = 14 \text{ (1)}$$

$$x = 7 \text{ (1)}$$

$$x = 7$$

$$y = 3 \text{ (1)} \quad [3 \text{ marks}]$$

2 Solve the simultaneous equations

$$3x + y = 14$$

$$x + y = 6$$

$$2x = 8 \text{ (1)}$$

$$x = 4 \text{ (1)}$$

$$x = 4$$

$$y = 2 \text{ (1)} \quad [3 \text{ marks}]$$

3 Solve the simultaneous equations

$$2x + 3y = 16$$

$$2x + y = 8$$

$$2y = 8 \text{ (1)}$$

$$y = 4 \text{ (1)}$$

$$x = 2 \text{ (1)}$$

$$y = 4 \quad [3 \text{ marks}]$$

4

Solve the simultaneous equations

$$5x - 2y = 11$$

$$3x + 2y = 13$$

$$8x = 24 \text{ (1)}$$

$$x = 3 \text{ (1)}$$

$$x = \underline{3}$$

$$y = \underline{2 \text{ (1)}} \quad [3 \text{ marks}]$$

5

Solve the simultaneous equations

$$3x + 2y = 16$$

$$x + 4y = 12$$

$$6x + 4y = 32 \text{ (1)}$$

$$5x = 20 \text{ (1)}$$

$$x = 4 \text{ (1)}$$

$$x = \underline{4}$$

$$y = \underline{2 \text{ (1)}} \quad [4 \text{ marks}]$$

6

2 coffees and 1 tea cost £7.10

1 coffee and 1 tea cost £4.30

Work out the cost of one coffee and the cost of one tea.

$$2c + t = 7.10 \text{ and } c + t = 4.30 \text{ (1)}$$

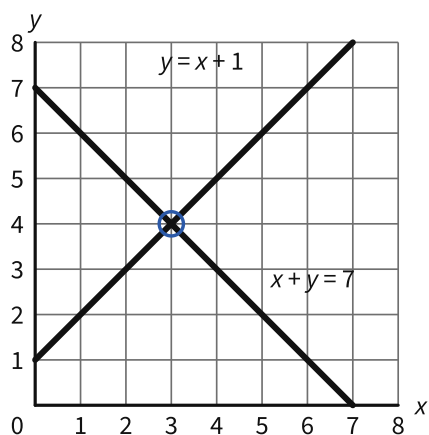
$$c = 2.80 \text{ (1)}$$

$$\text{coffee } \pounds \underline{2.80 \text{ (1)}}$$

$$\text{tea } \pounds \underline{1.50 \text{ (1)}} \quad [4 \text{ marks}]$$

7

The grid shows the graphs of $y = x + 1$ and $x + y = 7$



Use the graphs to solve the simultaneous equations

$$y = x + 1$$

$$x + y = 7$$

$$x = \underline{3 \text{ (1)}}$$

$$y = \underline{4 \text{ (1)}} \quad [2 \text{ marks}]$$

8

Ali says that $x = 2, y = 5$ is the solution of these simultaneous equations.

$$3x + y = 11$$

$$x + y = 8$$

Is Ali correct?

You **must** show your working.

$$3 \times 2 + 5 = 11, \text{ so the first equation works (1)}$$

$$2 + 5 = 7, \text{ not } 8, \text{ so no (1)}$$

[2 marks]

Question	Topic	RAG
1	I can solve simultaneous equations by adding	
2	I can solve simultaneous equations by subtracting	
3	I can eliminate either variable	
4	I can choose whether to add or subtract	
5	I can multiply an equation first	
6	I can set up and solve simultaneous equations from a problem	
7	I can solve simultaneous equations from a graph	
8	I can check a solution	