

Topic 12 Simultaneous Equations (Pre-TT) [28]

1.

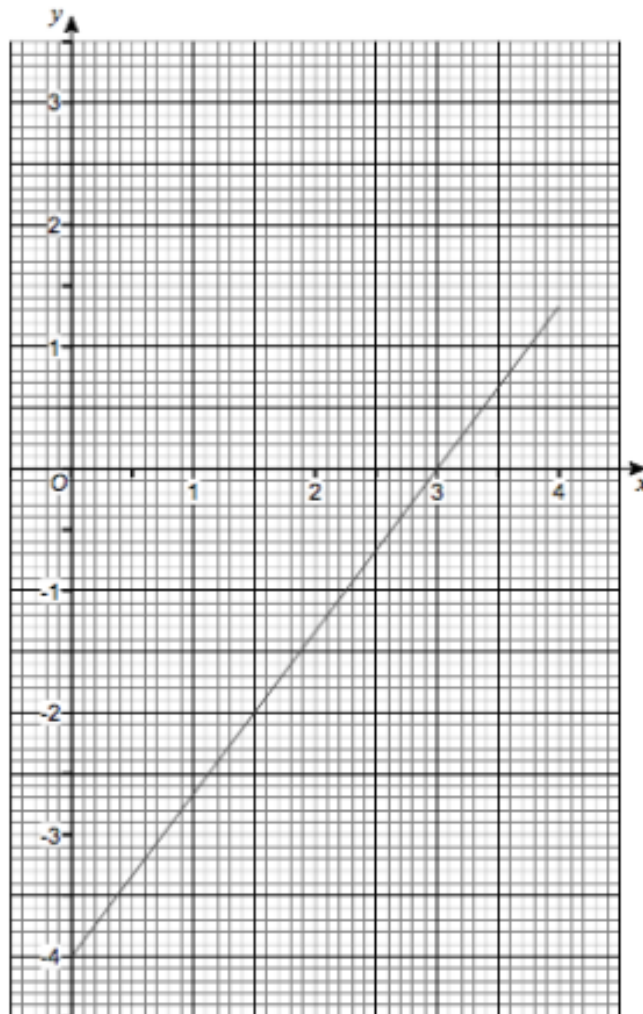
Solve the simultaneous equations $4x + 3y = 14$ $2x + y = 5$

You **must** show your working.
Do **not** use trial and improvement.

(Total 3 marks)

2. **N.B. Copy the graph below into your book.**

Here is the graph of $4x - 3y = 12$ for values of x from 0 to 4



By drawing a second graph on the grid,
work out an approximate solution to the simultaneous equations

$$4x - 3y = 12 \quad \text{and} \quad 3x + 2y = 6$$

[3 marks]

3.

Solve the simultaneous equations

$$\begin{aligned} 2x + 3y &= 9 \\ 3x + 2y &= 1 \end{aligned}$$

You **must** show your working.
Do **not** use trial and improvement.

(Total 4 marks)

4.

The sum of two numbers is 15.

The difference of the same two numbers is 3.

What is the product of the two numbers?

You **must** show your working.

(Total 3 marks)

5.

Solve the simultaneous equations

$$5x + 3y = 13$$

$$3x + 5y = 3$$

You **must** show your working.

Do **not** use trial and improvement.

(Total 4 marks)

6. **Non-calculator**

Andrew buys 3 coffees and 2 teas for £5.00.

Katie buys 4 coffees and 3 teas for £6.95.

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

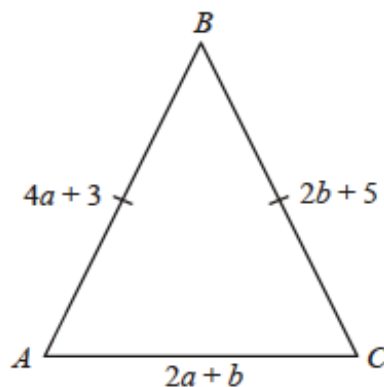
(Total 5 marks)

7.

ABC is an isosceles triangle.

The lengths, in cm, of the sides are

$$AB = 4a + 3, BC = 2b + 5 \text{ and } AC = 2a + b$$



Not to scale

(a) $AB = BC$

Show that $2a - b = 1$

(2)

(b) The perimeter of the triangle is 32 cm. Find the values of a and b .

(4)

(Total 6 marks)