GCSE Mathematics

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Algebra Topics: Simultaneous Equations

Example.

Solve the equations $3x + 5y = 6$ (1)
$2x + 3y = 5$ (2)

Solution

(1) × 2 $6x + 10y = 12$ (3)

(2) × 3 $6x + 9y = 15$ (4)

(3) – (4) $y = -3$

substitute $y = -3$ into (1) $3x - 15 = 6$
$\therefore 3x = 21$ $\therefore x = 7$

Solution: x = 7 and y = –3

1. Solve the following simultaneous equations by an algebraic (not graphical) method.

$4x + 5y = -5$
$6x + 4y = 3$ [4]

2. Solve the following simultaneous equations by an algebraic (not graphical) method.

$3x - 2y = 16$
$x + 3y = -2$ [4]

3. Solve the following simultaneous equations by an algebraic (not graphical) method.

$3x - 4y = 22$
$2x + 3y = -8$ [4]

4. Solve the following simultaneous equations by an algebraic (not graphical) method.

$3x + 4y = 2$
$5x + 6y = 6$ [4]