

Simultaneous Linear Equations Mark Scheme

1. $x = 6$
 $y = -2$ 4

Eg eqn (1) $\times 2$ then add to eqn (2) $\times 3 \rightarrow 13x = 78$
 $x = 6$
 Eg $2 \times "6" + 3y = 6$
 $y = -2$

M1 correct process to eliminate either x or y (condone one error)
A1 cao for non-eliminated one
M1 (dep on 1st M1) for correct substn of their found value
A1 cao (need both)

[4]

2. $x = 4, y = -1$ 4

$4x - 6y = 22$
 $15x + 6y = 54$
 $19x = 76$

M1 for coefficients of x or y the same followed by correct operation, one arithmetical error
A1 cao
M1(dep) for correct sub for other variable
A1 cao
Trial and improvement 0 marks unless both x and y correct values found

[4]

3. $x = 6, y = -5$ 4

$4x + 6y = -6$	$6x + 9y = -9$
$9x - 6y = 84$	$6x - 4y = 56$
$13x = 78, x = 6$	$13y = -65y = -5$
$12 + 3y = -3$	$6x - 45 = -9$
$3y = -15$	$6x = 36$

M1 for a correct method leading to an equation in x or y (Allow one accuracy error)
A1 $x = 6$ (or $y = -5$)
M1 (dep) for substituting found value of x or y in one of the equations
A1 for $y = -5$ (or $x = 6$)

[4]

4. $x = 4 \frac{1}{2}$
 $y = -3$ 4
- $18x - 6y = 99$ $12x - 4y = 66$
 $8x + 6y = 18$ $12x + 9y = 27$
 $26x = 117$ $-13y = 39$
- M1 correct process to eliminate either x or y (condone one error)*
A1 cao for non – eliminated one.
M1 (dep on 1st M1) for correct substitution of their found value.
A1 cao (need both)
- [4]

5. $x = 3$
 $y = 0.5$ 3
- M1 for coefficients of x or y the same followed by correct operation, condone one arithmetical error*
M1 (dep) for substituting found value in one equation
A1 cao
SC: B1 for one correct answer only if Ms not awarded
- [3]

6. $a = 3$
 $b = -2$ 3
- M1 for a complete method which leads to a single equation in a or b only (allow 1 error)*
M1 (dep) substitute found value of a or b into one equation
A1 cao
SC B1 for one correct answer only if Ms not awarded,
 $a = 3$ or $b = -2$
- [3]

7. eg eqn(1) $\times 4$ then subtract eqn(2) $\times 3$ $13y = 65$
 $x = -3$
 or eqn(2) $\times 7$ then subtract eqn(1) $\times 5$ $13x = -39$
 eg $4x + 5 \times '5' = 13$
 $y = 5$ 4
- M1 correct full process to eliminate either x or y (condone one error)*
A1 cao either $y = 5$ or for $x = -3$
M1 (dep. on 1st M1) for correct substitution of their found value into one of the eqn's
A1 cao (both needed)
- [4]