| | | | |
|---|---|---|---|
| **1** | $x = 2$ | B1 | |

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|---|---|---|---|
| **2** | $\pm 6x$ or $\pm 3$<br>or $8x - 2x = 10 - 7$<br>or $7 - 10 = 2x - 8x$ | M1 | oe<br>terms in $x$ or constant terms collected |
| | $6x = 3$ or $-6x = -3$ | A1 | oe<br>implied by correct answer |
| | 0.5 or $\frac{1}{2}$ | A1ft | oe eg $\frac{3}{6}$<br>ft any equation of form<br>$6x = a$ or $-6x = a$<br>or $bx = 3$ or $bx = -3$ |
| | **Additional Guidance** | | |
| | $\frac{-3}{-6}$ | | M1A1A0 |
| | Trial and Improvement scores 0 or 3 | | |

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|---|---|---|---|
| **3(a)** | $-5$ | B1 | |
| | **Additional Guidance** | | |
| | $-5 + 17 = 12$ or $17 - 5 = 12$ but $-5$ not selected as answer | | B0 |

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|---|---|---|---|
| **3(b)** | 48 | B1 | |
| | **Additional Guidance** | | |
| | 48 seen but 12 given as answer | | B0 |
| | Answer $\frac{48}{4}$ | | B0 |

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|---|---|---|---|
| **3(c)** | $\frac{3}{4}$ or 0.75 | B2 | B1 partial simplification<br>eg $\frac{3m}{4m}$ or $\frac{0.75m}{m}$ or $\frac{9}{12}$ |
| | **Additional Guidance** | | |
| | eg $\frac{3m}{4m}$ seen but answer given as $0.75m$ | | B1 |

| | | | |
|---|---|---|---|
| 4 | $a = 7$ | B2 | B1 $3ax - 10a$<br>or $3ax = 21x$ or $3ax - 21x = 0$<br>or $3a = 21$ or $3a - 21 = 0$<br>or $21 \div 3$ oe<br>or $-10a = 2b$ oe |
| | $b = -35$ | B1ft | ft $-5 \times$ their $a$ where $a \neq 0$ |
| | **Additional Guidance** | | |
| | Ignore collection error if correct expansion seen<br>eg $3ax - 10a - 21x + 2b = 0$ (should be $-2b$) | | B1 |
| | Ignore incorrect simplification if correct expansion seen<br>eg $3ax - 10a = -7ax$ | | B1 |
| | Allow eg $a \times 3x$ for $3ax$ | | |
| | Allow eg $a3x$ for $3ax$ | | |
| | Embedded 7 with $a = 7$ not stated<br>eg $7(3x - 10)$ or $7 \times 3x = 21x$ or $21 \div 7 = 3$ | | B1 |
| | Allow B1 even if not subsequently used | | |

| Q | Answer | Mark | Comments |
|---|---|---|---|
| 5 | $10x = 21 + 3$ or $10x = 24$<br>or<br>$(21 + 3) \div 10$ or $24 \div 10$ | M1 | oe eg $-10x = -3 - 21$ |
| | 2.4 | A1 | oe eg $\frac{24}{10}$ or $\frac{12}{5}$ or $2\frac{4}{10}$ or $2\frac{2}{5}$<br>SC1 1.8 oe |
| | **Additional Guidance** | | |
| | $10x - 3 + 3 = 21 + 3$ | | M1 |
| | $10x - 3 = 21 + 3$ or $10x - 3 + 3 = 21$ unless recovered | | M0 |
| | $10x \div 10 - 3 \div 10 = 21 \div 10$ | | M1 |
| | $10x \div 10 - 3 = 21 \div 10$ unless recovered | | M0 |
| | Embedded answer eg $10 \times 2.4 - 3 = 21$ with no or incorrect answer | | M1A0 |

| Q | Answer | Mark | Comments |
|---|---|---|---|
| 6 | $x = 8$ | B1 | |

| Q | Answer | Mark | Comments |
|---|---|---|---|
| 7 | $2w = \frac{4}{5} \times 15$ or $2w = \frac{60}{5}$<br>or $2w = 12$<br>or $\frac{2w}{15} = \frac{12}{15}$<br>or $\frac{w}{3} = \frac{2}{1}$ or $\frac{w}{2} = \frac{3}{1}$<br>or $\frac{w}{15} = \frac{4}{5} \div 2$ or $\frac{w}{15} = \frac{2}{5}$<br>or $2w \times 5 = 4 \times 15$ or $10w = 60$<br>or $\frac{4}{5} \div \frac{2}{15}$ | M1 | oe in the form $aw = n$ where $a$ is an integer and $n$ is an integer, fraction or decimal<br>oe in the form $\frac{bw}{x} = \frac{c}{x}$ where $x$ is a common denominator<br>oe calculation |
| | 6 | A1 | |
| | **Additional Guidance** | | |
| | Embedded answer 6 eg $\frac{2 \times 6}{15} = \frac{4}{5}$ | | M1A0 |

| Q | Answer | Mark | Comments |
|---|---|---|---|
| 8(a) | (2, –1) | B1 | |

| Q | Answer | Mark | Comments |
|---|---|---|---|
| 9 | **Alternative method 1** | | |
| | $10x - 5$ | M1 | may be seen in a grid |
| | their $10x - 6x = 9 +$ their 5<br>or<br>$4x = 14$<br>or<br>$14 \div 4$ or $7 \div 2$ | M1 | oe eg their $-5 - 9 = 6x -$ their $10x$<br>or $4x - 14 = 0$<br>collecting two terms in $x$ and two constant terms correctly |
| | $\frac{14}{4}$ or $3\frac{2}{4}$ or $\frac{7}{2}$ or $3\frac{1}{2}$ or 3.5 | A1ft | oe<br>ft M1M0 or M0M1 with exactly one error |
| | **Alternative method 2** | | |
| | $\frac{6x}{5} + \frac{9}{5}$ | M1 | oe two terms eg $1.2x + 1.8$ |
| | $2x -$ their $\frac{6x}{5} =$ their $\frac{9}{5} + 1$<br>or $\frac{4x}{5} = \frac{14}{5}$ | M1 | oe eg $-1 -$ their $\frac{9}{5} =$ their $\frac{6x}{5} - 2x$<br>or $\frac{4x}{5} - \frac{14}{5} = 0$<br>collecting two terms in $x$ and two constant terms correctly |
| | $\frac{14}{4}$ or $3\frac{2}{4}$ or $\frac{7}{2}$ or $3\frac{1}{2}$ or 3.5 | A1ft | oe<br>ft M1M0 or M0M1 with exactly one error |

| | Additional Guidance | |
|---|---|---|
| **9 cont** | Ignore simplification or conversion if correct answer seen | |
| | Correct answer from trial and improvement | M1M1A1 |
| | Correct equation with terms collected or division with no or incorrect answer | M1M1A0 |
| | Embedded 3.5 with no or incorrect answer | M1M1A0 |
| | $10x - 5 = 6x + 9$<br>$10x - 6x = 9 - 5$<br>$x = 1$ (exactly one error in line 2) | M1<br>M0<br>A1ft |
| | $7x - 5 = 6x + 9$<br>$7x - 6x = 9 + 5$<br>$x = 14$ (exactly one error in line 1) | M0<br>M1<br>A1ft |
| | $10x - 5 = 6x + 9$<br>$10x + 6x = 9 - 5$<br>$x = \frac{4}{16}$ (two errors in line 2) | M1<br>M0<br>A0ft |
| | $10x - 1 = 6x + 9$<br>$10x - 6x = 9 + 1$<br>$x = 3$ (exactly one error in line 1 but answer does not ft) | M0<br>M1<br>A0ft |
| | $7x - 6 = 6x + 9$<br>$7x - 6x = 9 + 6$<br>$x = 15$ (two errors in line 1) | M0<br>M1<br>A0ft |
| | $10x + 4 = 6x + 9$<br>$10x - 6x = 9 + 4$<br>$x = 3.25$ (neither M mark scored) | M0<br>M0<br>A0ft |
| | $10x - 5 = 30x + 45$ | M1M0A0ft |
| | Any ft answer must be rounded or truncated to 1 dp or better | |
| | The last two marks can be implied without the collection of terms seen<br>eg $10x - 1 = 6x + 9$ and $x = 2.5$ | M0M1A1ft |
| | Collecting terms before the bracket has been expanded | M0M0A0ft |

| Q | Answer | Mark | Comments |
|---|---|---|---|
| 10(a) | 3 | B1 | |

| Q | Answer | Mark | Comments |
|---|---|---|---|
| 10(b) | 43 | B1 | |

| Q | Answer | Mark | Comments |
|---|---|---|---|
| 10(c) | 32 | B1 | |

| Q | Answer | Mark | Comments |
|---|---|---|---|
| 11(a) | $11x - 6x$ or $6x - 11x$ or $\pm 5x$<br>or<br>$(+)1 + 3$ or $-3 - 1$ or $\pm 4$ | M1 | oe<br>terms in $x$ or constant terms collected |
| | $5x = 4$<br>or<br>$-5x = -4$ | A1 | may be implied<br>eg $4 \div 5$ or $-4 \div -5$ or $\frac{-4}{-5}$ |
| | $\frac{4}{5}$ or 0.8 | A1ft | oe<br>ft any equation of the form<br>$5x = a$ or $-5x = a$<br>or $bx = 4$ or $bx = -4$ |
| | **Additional Guidance** | | |
| | Ignore attempt to convert or simplify after correct answer seen | | |
| | Trial and improvement scores 3 or 0 | | |
| | $5x - 4 (= 0)$ with no further work | | M1A0A0 |
| | $\frac{4}{5}$ and $5x = 4$ on answer line | | M1A1A1 |
| | Embedded answer eg $11 \times 0.8 - 3 = 6 \times 0.8 + 1$ | | M1A1A0 |
| | ft answers must be exact or rounded to 2 dp or better<br>eg $17x = 4$, answer $\frac{4}{17}$<br>eg $17x = -4$, answer $-0.24$ | | M1A0A1ft<br>M1A0A1ft |
| | $5x + 4$ or $5x + 4 = 0$ or $17x - 4$ or $17x - 4 = 0$ etc with no further work | | M1 |
| | $\pm 5x$ or $\pm 4$ must not have come from incorrect working | | |

| Q | Answer | Mark | Comments |
|---|---|---|---|
| 11(b) | $2x = 14 \times 5$ or $2x = 70$<br>or<br>$\frac{x}{5} = 14 \div 2$ or $\frac{x}{5} = 7$<br>or<br>$14 \times 5 \div 2$ or $70 \div 2$ | M1 | oe eg $14 \div 0.4$ |
| | 35 | A1 | |
| | **Additional Guidance** | | |
| | Trial and improvement scores 2 or 0 | | |
| | Embedded answer eg $\frac{2 \times 35}{5}$ | | M1A0 |
| | $\frac{2x}{5} = \frac{14 \times 5}{5}$ | | M1 |

| Q | Answer | Mark | Comments |
|---|---|---|---|
| 12(a) | 12 | B1 | |
| | **Additional Guidance** | | |
| | Answer $12 - 12 = 0$ | | B0 |

| Q | Answer | Mark | Comments |
|---|---|---|---|
| 12(b) | 0 | B1 | |
| | **Additional Guidance** | | |
| | $\frac{0}{7}$ | | B0 |
| | Answer $7 \times 0 = 0$ | | B0 |

| Q | Answer | Mark | Comments |
|---|---|---|---|
| 13 | $7x - 4x$ or $3x$<br>or $4x - 7x$ or $-3x$<br>or<br>$-22 - 29$ or $-51$<br>or $22 + 29$ or $51$ | M1 | |
| | $3x = 51$<br>or $-3x = -51$ | A1 | $\frac{51}{3}$ or $\frac{-51}{-3}$ implies M1A1<br>implied by correct answer |
| | 17 | A1ft | ft M1A0 from an equation of the form $\pm 3x = a$ or $bx = \pm 51$ |
| | **Additional Guidance** | | |
| | Trial and improvement scores 0 or 3 | | |
| | If a follow through answer does not simplify to an integer, accept it as a fraction, mixed number or decimal to at least 1dp.<br>eg from $3x = 7$ accept $\frac{7}{3}$ or $2\frac{1}{3}$ or 2.3 or better<br>Ignore any attempt to convert a correct ft fraction | | M1A0A1ft |
| | Embedded answer | | M1A1A0 |