Solving Basic Equations Past Paper Questions (MS)

Q1.

Paper: 5MB3F_01					
Question		Working	Answer	Mark	Notes
	(a)		4	1	B1 cao
	(b)		6	1	B1 cao

Q2.

Question		Working	Answer	Mark	Notes
			20	1	B1 cao

Q3.

Paper 1MA1: 1F			
Question	Working	Answer	Notes
		7	M1 Correct method to isolate terms in x A1

Q4.

Question		Working	Answer	Mark	Notes
	(a)		19	1	B1 cao
	(b)		8	1	B1 cao
	(c)		2¼	2	M1 for $4m = 15 - 6$ **or** clear attempt to subtract 6 from both sides of the equation A1 for 2¼ **or** 2.25 **or** $\frac{9}{4}$

Q5.

PAPER: 1MA0_1F					
Question		Working	Answer	Mark	Notes
	(a)		14	1	B1 cao
	(b)		5	2	M1 for intention to subtract 4 from each side or divide each term by 3 as a first step or embedded answer. A1 cao

Q6.

Question	Answer	Mark	Mark scheme	Additional guidance
(a)	17	B1	cao	
(b)	12	B1	cao	
(c)	5.5	B1	Accept $\frac{11}{2}$, $5\frac{1}{2}$ oe	

Q7.

Question	Working	Answer	Mark	Notes
		$\frac{4}{5}$	M1	for a method to isolate x terms on one side and number terms to the other side
			A1	oe

Q8.

PAPER: 1MA0_2F				
Question	**Working**	**Answer**	**Mark**	**Notes**
(a)		–0.5	2	M1 for intention to subtract 19 from both sides or divide all terms by 8 as a first step A1 for –0.5 oe
(b)		3	2	M1 for a correct operation to collect the c terms or the number terms on one side of the equation e.g. $2c - c + 5 = 8$, $2c + 5 - 5 = c + 8 - 5$ A1 cao

Q9.

PAPER: 1MA0_2F					
Question		**Working**	**Answer**	**Mark**	**Notes**
	(a)		22	1	B1 cao
	(b)		18	1	B1 cao
	(c)		3.4	2	M1 for intention to subtract 7 from both sides or divide all terms by 5 as a first step. A1 for 3.4 oe

Q10.

Question	Working	Answer	Mark	Notes
		−2	3	M1 for expanding brackets e.g. $4x+12\ (=2x+8)$ or divide by 4 as a first step e.g. $x+3=\frac{2x}{4}+\frac{8}{4}$ M1 ft their equations which have to be of the form $ax + b = 2x + 8$ **or** $x + 3 = ax + b$ for isolating terms in x **and** numbers e.g. $4x - 2x = 8 - 12$ seen as part of their solution oe A1 cao

Q11.

Question	Working	Answer	Mark	Notes
		$1\frac{1}{2}$	M1	for correct expansion of the bracket or dividing all terms by 3 as a first step eg $3x - 3$ or $(5x - 6)/3 = 3(x - 1)/3$
			M1	for isolating terms in x on one side of an equation eg $5x - 6 - 3x = -3$ or both constants on one side of an equation, eg $5x = 3x - 3 + 6$, ft $5x - 6 = 3x - 1$
			A1	for $1\frac{1}{2}$ oe

Q12.

		Working	Answer	Mark	Notes
		$3x - 6 = x + 7$ $2x = 13$	6.5	3	M1 for $3\times x - 3\times 2$ (=$3x - 6$) or $\frac{x}{3} + \frac{7}{3}$ seen M1 for correct method to isolate the terms in x or the number terms on opposite sides of an equation A1 for 6.5 oe

Q13.

Question	Answer	Mark	Mark scheme	Additional guidance
	17	M1	for correctly expanding the bracket, as part of an equation to get $4x - 24 = 44$ **or** for dividing both sides of the equation by 4 as a first step, eg $\frac{4(x-6)}{4}=\frac{44}{4}$ oe	Award M1 for an embedded value of 17 if not identified as the answer
		A1	cao	

Q14.

Question	Answer	Mark	Mark scheme	Additional guidance
	3.8	M1	for a correct first step, eg $5-x=2(2x-7)$ or $5-x=4x-14$ or $\frac{5}{2}-\frac{x}{2}=2x-7$	Method must show LHS ×2 and both terms on RHS ×2 or $5-x$ and both terms on RHS ×2
		M1	(dep) for isolating terms in x eg $4x+x=14+5$ or $-\frac{x}{2}-2x=-7$ $-\frac{5}{2}$	eg $-4x$ both sides with -5 both sides or $+x$ both sides with $+14$ both sides
		A1	oe	Accept $\frac{19}{5}$, $3\frac{4}{5}$ oe but not $\frac{-19}{-5}$ oe

Q15.

Question	Answer	Mark	Mark scheme	Additional guidance
(a)	14	M1	for 4×5 and 3×-2, the substitution may be seen in two separate calculations, eg 4×5 (= 20) and 3×-2 (= −6)	
		A1	cao	
(b)	$4e^2+8e$	B2	for $4e^2+8e$	
		(B1	for $4e^2$ or $8e$)	Note: $4e^2+8e=12e^3$ for example gets B1 only
(c)	11	M1	for a correct first step eg $3\times m-3\times4=21$ oe or $m-4=21\div3$ (= 7) oe	Showing ÷3 by each side of equation is sufficient
		A1	cao	