

Question		Answer	Marks	Part Marks and Guidance	
1	(a)	4 1 6	2	B1 for one correct value	
	(b)	Correct ruled graph	2	M1 for 2 of <i>their</i> points correctly plotted or for correct line any length	Graph from 0 to 6 for 2
	(c)	-0.8 to -0.5	2FT	M1 for use of $\frac{\Delta y}{\Delta x}$ soi or rearranging to $y = mx + c$ or 0.5 to 0.8 Or SC1 for -2 to -1.25	$\frac{-2}{3}, \frac{2}{-3}, \frac{-4}{6}, \frac{4}{-6}$ all score 2 If <i>their</i> line is incorrect and has negative gradient, allow M1A1FT for correct gradient of <i>their</i> line found ($\pm 15\%$) or M1 for the absolute value of its gradient. If <i>their</i> line has $m > 0$ then max M1

2	(a)		96	2	nfw M1 for [6 ×] 16 Or SC1 for answers of -96 or 576	
	(b)		7, 11, 15	2	M1 for two terms in correct place Or SC1 for 3, 7, 11	eg M1 for 3, 11, 15
	(c)		$3y(2y + 3)$	2	M1 for $3y(\dots)$ or for $y(6y + 9)$ or for $3(2y^2 + 3y)$	Condone missing final bracket
	(d)		$\frac{15}{4}$ oe isw	3	M2 for $15 = 4x$ oe OR M1 for xs or numbers collected and simplified correctly M1FT for final answer FT <i>their</i> $ax = b$ with $a \neq 1$ or 0 or b and $b \neq 0$ Allow B3 for correct answer given embedded as final answer	Allow M1 for eg $2x = 6x - 15$ eg $2 \times \frac{15}{4} + 7 = 6 \quad \frac{15}{4} -$
	(e)		$[x =] \frac{y-6}{4}$ or $\frac{y}{4} - 1.5$ oe	2	M1 for a correct constructive first step, or for answer correct except for a sign error	eg M1 for $\frac{6-y}{4}$ (sign error in denominator)

3	(a)	(i)	25	1			
		(ii)	-2000	1			
		(iii)	-0.5 oe or $-\frac{1}{2}$	1	0 for $\frac{1}{-2}$		
	(b)	(i)	0.75	4	oe, nfw; isw wrong conversion after $\frac{3}{4}$ M1 for $6x - 2 [= 10x - 5]$ oe and M2 for $3 = 4x$ oe or FT or M1FT for collecting xs <u>or</u> numbers correctly FT on opposite sides of equation and M1FT for <i>their</i> final answer FT <i>their</i> $ax = b$, dep on at least M1 already earned, for $a \neq 0$ or 1 and $b \neq 0$ (isw wrong conversion)		for dealing with brackets correctly, or division by 2: $[3x - 1 =] 5x - 2.5$ oe award a max. of M3 if answer is not correct
		(ii)	8 or -8 (both required)	3	B2 for one solution or for $x = \pm\sqrt{64}$ or M1 for $x^2 = 64$ or for $(x - 8)(x + 8) [= 0]$ or SC1 for $8^2 = 64$ or $8^2 - 4 = 60$ and SC1 for $(-8)^2 = 64$ or $(-8)^2 - 4 = 60$		

4	(a)	15 1	1+1								
	(b)	$2.5x + 2 = x - 1$ or $5x + 4 = 2x - 2$ $1.5x = -3$ or $3x = -6$ $[x =] -2$	M1 M1 M1	For correctly dealing with 2 in denominator and expanding brackets if necessary For correctly collecting x terms on one side and numbers on the other, FT <i>their</i> equation; must have a single term on each side For final answer FT <i>their</i> $ax = b$ or $ax - b = 0$, with $a \neq \pm 1$ and $b \neq 0$ Allow B3 for $[x =] -2$ as answer from trials	Allow M s for combined steps if next equation is correct FT If FT is not an integer answer, accept fractions and ignore subsequent conversions eg to decimals; for recurring decimals eg allow 0.16 to 0.17 for $1/6$ for the last M1FT if no fraction seen Common errors: MOM1M1 for <table border="1" style="margin-left: auto; margin-right: auto;"> <tr> <td>$5x + 4 = 2x - 1$</td> <td>$5x + 4 = x - 2$</td> </tr> <tr> <td>$3x = -5$</td> <td>$4x = -6$</td> </tr> <tr> <td>$x = -5/3$</td> <td>$x = -1.5$</td> </tr> </table> Combined steps: eg $5x + 4 = x - 2$ M0 $4x + 6 = 0$ M0 not far enough $x = -1.5$ M1M1FT	$5x + 4 = 2x - 1$	$5x + 4 = x - 2$	$3x = -5$	$4x = -6$	$x = -5/3$	$x = -1.5$
$5x + 4 = 2x - 1$	$5x + 4 = x - 2$										
$3x = -5$	$4x = -6$										
$x = -5/3$	$x = -1.5$										
	(c)	9 and -9	1+1	Condo embedded							

	(d)		$H^2 = 10p + c$ $H^2 - c = 10p$ oe or FT $\frac{H^2 - c}{10} [= p]$ oe or FT as final answer	M1 M1 M1	Allow SC1 or first M1 for $c = H^2 - 10p$ as final answer or $\frac{H^2}{10} = p + \frac{c}{10}$ oe Allow M3 for correct final answer nfw Allow M2 for correct answer seen and then spoiled	
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5	(a)	(30 (30) 30 (30) 32 34 36 (38) 40	2	B1 for all 30s correct or 32 to 40 correct	
		(ii)	Correct ruled graph from 60 to 140	2	B1 for 4 points from <i>their</i> table plotted or either straight line section correct	Overlay available Allow top of histogram to imply points so long as consistently top left, right or middle
	(b)	(i)	Correct ruled graph from 60 to 140	2	B1 for at least 2 correct (and not more than one incorrect) points plotted or for part of the correct line	Overlay available Covering a range of at least 40 Ignore labels
		(ii)	120 (± 2)	1FT	Correct or FT <i>their</i> single point of intersection from (b)(i) (± 2)	