23	(a)		0	1	B1
	(b)	eg $\left(\text{f}(0.5)\right)=\frac{1}{0.5}\left(=2\right)$ oe **or** $\left(\text{gf}(0.5)\right)=4\left(\frac{1}{0.5}\right)^2-8\left(\frac{1}{0.5}\right)+15$ **or** $\left(\text{gf}(x)\right)=4\left(\frac{1}{x}\right)^2-8\left(\frac{1}{x}\right)+15\left(=\frac{4}{x^2}-\frac{8}{x}+15\right)$		2	M1 for finding f(0.5) **or** gf(0.5) **or** gf(x)
		Correct answer scores full marks (unless from obvious incorrect working)	15		A1

(c)	eg $x = 4(y^2 - 2y) + ...$ **or** $x = 4\left(y^2 - 2y + ...\right)$ oe	eg $x - 11 = 4y^2 - 8y + 4$ oe **or** eg $x - 15 = 4y^2 - 8y$ oe **or** eg $x = 4\left(y^2 - 2y + 1\right) + 11$ oe		4	M1	for correctly taking out a factor of 4 or for a correct start to the method in rearranging NB: for each method, allow x and y to be used the other way around
	eg $x = 4\left[(y-1)^2 - 1^2\right] + ...$ **or** $x = 4\left[(y-1)^2 - 1^2 + ...\right]$ **or** $x = 4(y-1)^2 - 4 + ...$ oe	eg $\frac{x-11}{4} = y^2 - 2y + 1$ oe **or** $\frac{x-15}{4} + 1 = y^2 - 2y + 1$ oe **or** $\frac{x-15}{4} = y^2 - 2y$ oe **or** $x = 4(y-1)^2 + 11$ oe			M1	for correctly completing the square **or** correctly isolating $y^2 - 2y + 1$ or $y^2 - 2y$ or for $x = 4(y-1)^2 + 11$ oe Award of this mark implies the previous mark
	eg $(y-1)^2 = \frac{x-11}{4}$ oe	eg $(y-1)^2 = \frac{x-11}{4}$ oe **or** eg $(y-1)^2 = \frac{x-15}{4} + 1$ oe			M1	for reaching $(y-1)^2 = \frac{x-11}{4}$ oe **or** an answer of $1 \pm \sqrt{\frac{x-11}{4}}$ or $1 - \sqrt{\frac{x-11}{4}}$
	Correct answer scores full marks (unless from obvious incorrect working)		$1 + \sqrt{\frac{x-11}{4}}$		A1	must be in terms of x, oe eg $1 + \sqrt{\frac{x-15}{4} + 1}$ or $\frac{\sqrt{x-11} + 2}{2}$ or $1 + \frac{\sqrt{x-11}}{2}$ Do not ISW incorrect simplification eg $1 + \sqrt{\frac{x-11}{4}} = 1 + \sqrt{\frac{x}{4}} - \sqrt{\frac{11}{4}}$ is M3A0
						Total 7 marks