5	**(a)**	**(i)**	4 units in the negative x-direction	**M1**	**1.1**	Indicate horizontal translation (in either direction) in some way with magnitude of 4 ('units' not required)	**B1** for $\begin{pmatrix} 4 \\ 0 \end{pmatrix}$ Condone informal language as long as intent is clear eg 'left' (or even 'right', as either direction allowed) **M0** if ambiguous eg 'in' or 'on' the x-axis
				A1 **[2]**	**2.5**	or 4 in negative x-direction Correct language needed	**B2** for $\begin{pmatrix} -4 \\ 0 \end{pmatrix}$ Must now be correct language so **A0** for eg 'along' the x-axis or 'left' Allow 'parallel to the x-axis' or 'horizontal'

Question			Answer	Marks	AO	Guidance	
5	(a)	(ii)	in the y-direction with sf 16	**B1** **B1** **[2]**	**3.1a** **1.1**	Identify direction - correct language needed or 2^4	Allow 'x-axis invariant', 'parallel to the y-axis' or 'vertical' Condone 'positive' y-direction (as given function > 0) 'scale factor' or 'factor' needed (condone 'stretch' factor) Not dep on previous B1, but must have indicated vertical stretch in some way, including informal language such as 'upwards' Cannot be ambiguous language, such as 'in', 'on', 'across' the y-axis
5	(b)		**DR** $\log_2(8x(1-x)) = 1$	**M1**	**1.1a**	Correctly combine two correct log terms	Or $\log_2(8x) = \log_2 \frac{2}{1-x}$ Or $3 + \log_2(x(1-x)) = 1$ Or $\log_2(4x(1-x)) = 0$ **OR** use indices base 2 on both sides (ie $8x = 2^{1-\log_2(1-x)}$) and use rules of indices to split eg $8x = 2 \times 2^{-\log_2(1-x)}$

Question			Answer	Marks	AO	Guidance	
			$8x(1-x) = 2$	**M1**	**1.1a**	Correct method to remove logs	Correctly used on equation of form $\log_2 f(x) = \log_2 g(x)$ or $\log_2 f(x) = k$ **OR** correct method to deal with log term – expect $8x = \frac{2}{1-x}$
			eg $8x^2 - 8x + 2 = 0$ or $8x(1-x) = 2$ or $8x = \frac{2}{1-x}$	**A1**	**1.1**	Any correct equation not involving logarithms	Could still contain brackets and / or fractions
			$x = 0.5$	**A1**	**1.1**	Obtain $x = 0.5$	**A0** if additional solutions
				[4]			**DR** so no credit for answer only