4(a)	$\{10\} - (x\ \{+\}\ \{3\})^2$
4(b)	State reflection in x-axis
	Obtain $m = -3$
	Obtain $n = 10$

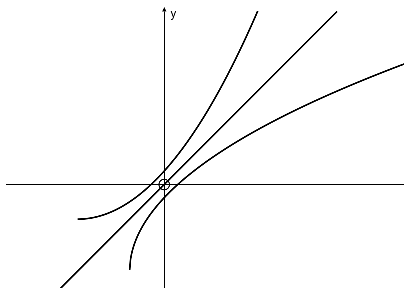
6(a)	State $\mathrm{f}(x)$ $y \geqslant -3$ or clear equivalent
6(b)	Attempt to arrange to $x = \ldots$ in terms of y or equivalent
	Obtain $-3 + \sqrt{x+12}$
6(c)	Attempt expression for $\mathrm{gf}(x)$
	Obtain $2(x+3)^2 - 29 = 69$
	Attempt solution of quadratic equation to find at least one value of x
	Obtain $x = 4$ only
	Alternative Method for Question 6(c)
	Attempt solution of $\mathrm{g}(x) = 69$ or evaluation of $\mathrm{g}^{-1}(69)$
	Obtain 37
	Attempt solution of $\mathrm{f}(x) = \textit{their}\ 37$ or evaluation of $\mathrm{f}^{-1}(\textit{their}\ 37)$
	Obtain $x = 4$ only

3(a)	Translation $\begin{pmatrix} 0 \\ 2 \end{pmatrix}$, or Translation 2 'parallel to the y-axis' or 'in the y-direction' or 'vertically'.
	{Stretch} {factor $\frac{1}{3}$} {parallel to x-axis or in x-direction or horizontally}
3(b)	$[y=]3\mathrm{g}(-x)$

9(a)	$\dfrac{4\times3\times(-2)}{(3x-6)^3}+\dfrac{1\times3\times(-3)}{(3x-6)^4}$ or $4\times3\times(-2)(3x-6)^{-3}+1\times3\times(-3)(3x-6)^{-4}$
	Decreasing.
9(b)	f^{-1} exists because f is a decreasing function Or f^{-1} exists because it is one-to-one, or passes the horizontal line test.

9(c)	$\mathrm{g}(x)>4a-3$
9(d)	**Either** $4a-3>2$ allow with x or a or $\geq$
	$a>\frac{5}{4}$ or $a\geqslant\frac{5}{4}$ oe
	Or $3\times(4a-3)-6>0$ allow with x or a or $\geqslant$
	$a>\frac{5}{4}$ or $a\geqslant\frac{5}{4}$ oe

10(a)	{Stretch} {factor 3} {parallel to y-axis/in y-direction/vertically}
	Translation $\begin{pmatrix} -2 \\ -5 \end{pmatrix}$
	Alternative solution for Question 10(a)
	Translation $\begin{pmatrix} -2 \\ -\frac{5}{3} \end{pmatrix}$
	{Stretch} {factor 3} {parallel to y-axis/in y-direction/vertically}

10(b)	
10(c)	$y = 3\sqrt{x+2} - 5 \Rightarrow \frac{y+5}{3} = \sqrt{x+2}$
	$[g^{-1}(x)] = \left(\frac{x+5}{3}\right)^2 - 2$
10(d)	[Range of g^{-1} is $g^{-1}(x)$] $\geqslant -2$

10(e)	$[g^{-1}h(4) = g^{-1}(2)] = \frac{31}{9}$
10(f)	hg^{-1} is impossible since the **range** of $\mathbf{g^{-1}}$ is $x \geqslant -2$ is **not within** the **domain** of **h**, which is $x \geqslant 0$

1	{Stretch} {factor 2} {'parallel to y-axis' or 'in y-direction' or 'vertically'}
	{Translation} $\begin{pmatrix} \{0\} \\ \{-14\} \end{pmatrix}$ or $\{-14\}$ {'parallel to the y-axis' or 'in the y-direction' or 'vertically'.}
	Alternative Method for Question 1
	{Translation by} $\begin{pmatrix} \{0\} \\ \{-7\} \end{pmatrix}$ or $\{-7\}$ {'parallel to the y-axis' or 'in the y-direction' or 'vertically'}
	{Stretch} {factor 2} {'parallel to y-axis' or 'in y-direction' or 'vertically'}

11(a)	$\{(x+2)^2\}\{-2\}$
11(b)(i)	$y=(x+2)^2-2 \Rightarrow\ y+2=(x+2)^2$
	$x=[\pm]\sqrt{y+2}-2$
	$[\mathrm{f}^{-1}(x)=]-\sqrt{x+2}-2$

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11(b)(ii)	$[\mathrm{gf}(x)=]-\{$*their* completed square form$\}-4$ or $-(x^2+4x+2)-4$
	$[gf(x)=]-(x+2)^2-2$
	$x=[\pm]\sqrt{-y-2}-2$
	$[(\mathrm{gf})^{-1}(x)=]-\sqrt{-x-2}-2$
	Alternative Method for Question 11(b)(ii)
	$(\mathrm{gf})^{-1}=\mathrm{f}^{-1}\mathrm{g}^{-1}$
	$\mathrm{g}^{-1}(x)=-x-4$
	$(\mathrm{gf})^{-1}(x)=-\sqrt{-x-4+2}-2$
	$[(\mathrm{gf})^{-1}(x)=]-\sqrt{-x-2}-2$