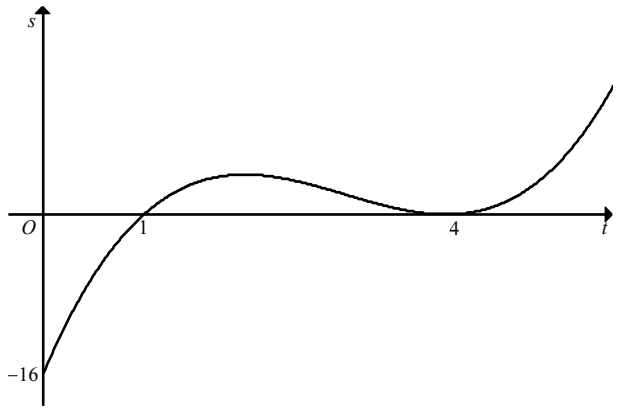
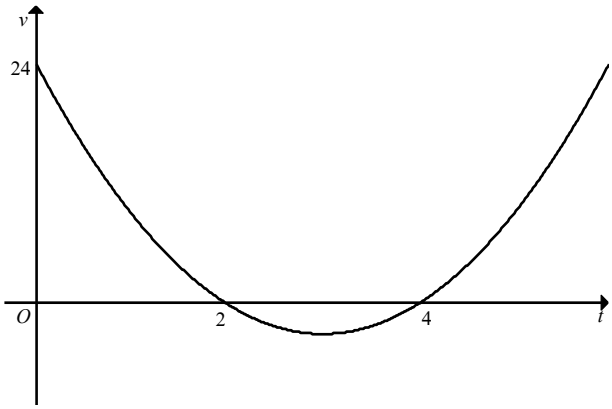
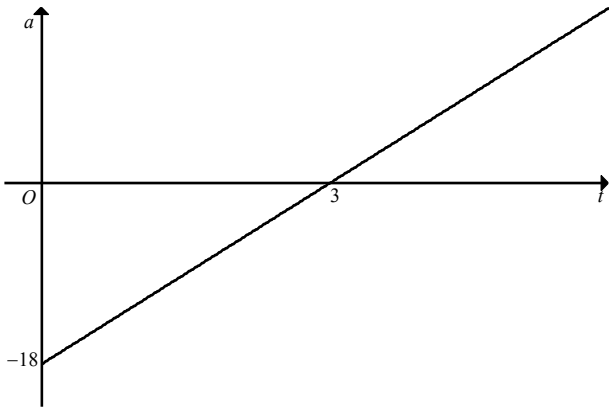
Question	Answer	Marks	Partial marks
1	$5x+2*3$ and $5x+2*-3$ oe	**M1**	where * could be = or any inequality sign
	Critical values: $\frac{1}{5}$, –1 soi	**A2**	**A1** for one correct value
	$x \leqslant -1 \quad x \geqslant \frac{1}{5}$ oe mark final answer	**A1**	
	Alternative method		
	$(5x+2)^2 * 3^2$	**(M1)**	where * could be = or any inequality sign
	Critical values: $\frac{1}{5}$, –1 soi	**(A2)**	**A1** for $25x^2+20x-5[*0]$
	$x \leqslant -1 \quad x \geqslant \frac{1}{5}$ oe mark final answer	**(A1)**	
2 (a)	Fully correct graph with all intercepts stated  	**2**	**B1** for correct cubic shape with maximum in the first quadrant, a point of tangency to the *t*-axis at the minimum point; must meet the *s*-axis **B1** for correct intercepts; must have attempted the correct shape
2(b)	v: $2(t-4)(t-1)+(t-4)^2$ (1) or s: $t^3-9t^2+24t-16$ **and** v: $3t^2-18t+24$	**M1**	
	v: $3(t-4)(t-2)$	**A1**	

Question	Answer	Marks	Partial marks
2(c)	Fully correct graph with all intercepts stated  	**B2**	**B1** for correct quadratic shape with minimum in the fourth quadrant; must meet the *v*-axis **B1** for correct intercepts; must have attempted the correct shape
2(d)	$6t - 18$ or $3(t - 4) + (3t - 6)$ oe	**B1**	**FT** *their* 3-term quadratic expression oe for *v* Correct linear expression for *a* from their *v* which must be either a 3-term quadratic or an expression that would simplify to a 3-term quadratic
2(e)	Fully correct ruled graph with all intercepts stated  	**3**	**B1** for a single ruled line with positive gradient in fourth and first quadrants; must meet the *a*-axis and cross the *t*-axis **B1 FT** for a line with *t*-intercept 3 **FT** *–thei r*(–18)÷ *their* 6 providing *their a* is a linear expression of the form $mt + c$ **B1 FT** for a line with *a*-intercept –18 **FT** *their* (–18) providing *their a* is a linear expression of the form $mt + c$

© Cambridge University Press & Assessment 2025

Question	Answer	Marks	Partial marks
3	$\frac{3\sqrt{x+2}}{\sqrt{x+2}+4}=1$ soi OR $g(x)=f^{-1}(1)$ and $f^{-1}(x)=\frac{4x}{3-x}$ oe	**2**	**M1** for $f(\sqrt{x+2})$ $[=1]$ soi or for $g(x)=f^{-1}(1)$ soi
	$x=2$ nfww	**2**	**M1 FT** for correct equation without an algebraic fraction e.g. $\sqrt{x+2}=2$ **FT** *their* $\frac{3\sqrt{x+2}}{\sqrt{x+2}+4}=1$ providing **M1** previously awarded and fg(x) is an algebraic fraction
	Alternative method		
	Solves $\frac{3x}{x+4}=1$ to find $x = 2$ and states $g(x)=2$	**(2)**	**M1** for solving $f(x)=1$ to find $x = k$ and states $g(x)=k$, where k is a constant
	$x=2$ nfww	**(2)**	**M1 FT** for $\sqrt{x+2}=k$ **FT** $g(x)=k$ *their* providing **M1** previously awarded