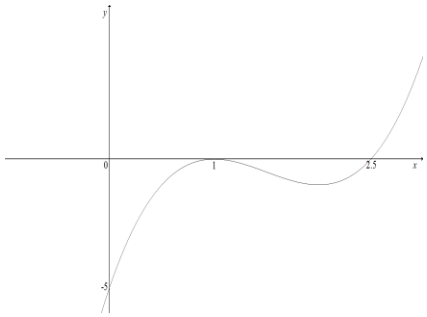
Question	Answer	Marks	Guidance
1(a)	$b = 3$	**B1**	
	Use of $y = a\cos bx + c$, with *their b* and either set of given coordinates	**M1**	*their* $b \neq \frac{2\pi}{3}$
	$c = -2$	**A1**	
	$a = 5$	**A1**	
1(b)	Minimum when $\cos bx = -1$ soi	**B1**	Allow for *their b*, $b \neq \frac{2\pi}{3}$
	$x = \frac{\pi}{3}$	**B1**	Allow if *b* is correct
	$y = -7$	**B1**	**FT** on *their c – their a*
	Alternative		
	$\frac{dy}{dx} = -15\sin 3x$	**(B1)**	**FT** on *their a, b* and *c*, $b \neq \frac{2\pi}{3}$
	When $\frac{dy}{dx} = 0$, $x = \frac{\pi}{3}$	**(B1)**	Allow if *b* is correct
	$y = -7$	**(B1)**	**FT** on *their c – their a*
2(a)	$(f'(x)) = 2(x-1)(2x-5) + 2(x-1)^2$ oe or $6x^2 - 18x + 12$	**M1**	For use of product rule or expansion and differentiation
	$2(x+1)(2x-5) + 2(x-1)^2 = 0$ oe or $6x^2 - 18x + 12 = 0$ oe	**M1**	**Dep** for equating *their* quadratic $f'(x)$ to zero and attempt to solve to obtain $x = \ldots$
	$x = 1, y = 0$ $x = 2, y = -1$	**2**	**A1** for any correct pair, must be from correct working only
2(b)		**3**	**B1** for a correct cubic shape **B1** for a correct cubic shape in the correct position, touching the *x*-axis once in the 4th quadrant and intersecting once with the positive *x*-axis **B1** for all intercepts and no extras
2(c)	$k < -1$	**B1**	
	$k > 0$	**B1**	