Question	Answer	Marks	Guidance
3	**Alternative**		
	$\ln(y+2) = mx^2 + c$ soi	**(B1)**	
	Gradient = –2.18, $-\frac{109}{50}$ oe	**(B1)**	
	$9.37 = 2.25m + c$ $3.92 = 4.75m + c$	**(M1)**	Use of a correct equation with *their* gradient and *c*
	$c = 14.3,\ 14.28,\ 14.275,\ \frac{571}{40}$	**(A1)**	
	$y = e^{(14.3 - 2.18x^2)} - 2$ oe	**(A1)**	**FT** on *their m* and *c*
4(a)	$n = 16$	**B1**	
	$+\frac{n(n-1)}{2!}\left((-)\frac{x}{2}\right)^2$, ${}^nC_2\left((-)\frac{x}{2}\right)^2$ oe $\frac{n(n-1)}{8} = p,\ p = 30$	**2**	**M1** for attempt at third term allow unsimplified in terms of *n* or *their n*, but not just as part of an expansion unless used to find *p* **A1** for *p*.
	$+\frac{n(n-1)(n-2)}{3!}\left((-)\frac{x}{2}\right)^3$, ${}^nC_3\left((-)\frac{x}{2}\right)^3$ $\frac{n(n-1)(n-2)}{48} = q,\quad q = -70$	**2**	**M1** for attempt at fourth term, allow unsimplified in terms of *n* or *their n*, but not just as part of an expansion unless used to find *q* **A1** for *q*.
4(b)	${}^6C_4\left(\frac{2}{x^2}\right)^2\left(\frac{x}{3}\right)^4$	**B1**	For identifying the correct term and attempting to evaluate.
	$\frac{20}{27}$	**B1**	
5	$\cos\left(2\theta + \frac{\pi}{6}\right) = (\pm)\frac{\sqrt{3}}{2}$ oe or $\tan\left(2\theta + \frac{\pi}{6}\right) = (\pm)\frac{1}{\sqrt{3}}$ oe	**B1**	
	$\theta = -\frac{\pi}{6},\ 0,\ \frac{\pi}{3}$ oe	**4**	**M1** for a correct order of operations, may be implied by one correct solution. **A1** for 1 correct solution. **A1** for a 2nd correct solution **A1** for a 3rd correct solution with no extra solutions in the range. All solutions must be from correct working.