Question	Answer	Marks	Partial Marks
9(a)	$\frac{x+4}{\sqrt[3]{x}} = x^{\frac{2}{3}} + 4x^{-\frac{1}{3}}$	**B1**	
	$\left[\frac{3}{5}x^{\frac{5}{3}} + 6x^{\frac{2}{3}}\right]_1^8$	**M1**	**FT** providing one term is correct in $x^{\frac{2}{3}} + 4x^{-\frac{1}{3}}$
	$\frac{3}{5}(8)^{\frac{5}{3}} + 6(8)^{\frac{2}{3}} - \left(\frac{3}{5}(1)^{\frac{5}{3}} + 6(1)^{\frac{2}{3}}\right) = 36.6$	**A1**	

Question	Answer	Marks	Partial Marks
9(b)	$10(0.1) = 7 - 3x$ and $0.1 = \frac{1}{3x+4}$ and evaluates both expressions as $x = 2$ oe	**M2**	**M1** for $10(0.1) = 7 - 3x$ and $0.1 = \frac{1}{3x+4}$ oe
	[Area trapezium =] $\frac{1}{2}(0.1+0.7)\times their\,2$ oe or $\frac{7(their\,2)}{10} - \frac{3(their\,2)^2}{20} - [0]$ oe or 0.8	**B1**	
	$\left[\int \frac{1}{3x+4}\,dx = \right]\frac{1}{3}\ln(3x+4) \quad [+c]$	**B2**	**B1** for $k\ln(3x+4)$ $k \neq \frac{1}{3}$ or for $\frac{1}{3}\ln 3x+4$
	$\frac{1}{3}\ln(3(2)+4) - \frac{1}{3}\ln(3(0)+4)$	**M1**	**dep** on at least previous **B1**
	their 0.8 – 0.3054…oe	**M1**	**dep** previous **M1**; **FT** *their* 0.8 providing the difference results in a positive value
	0.495 or 0.4945[69…] rot to 4 or more sf	**A1**	
10(a)(i)	$a + d$, $a + 13d$, $a + 16d$ soi	**B1**	
	$\frac{a+13d}{a+d} = \frac{a+16d}{a+13d}$ oe	**M2**	**FT** *their* 3 distinct terms providing of the form $a + kd$ where $k \neq 0$ and at least one is correct **M1** for either $[r =]\frac{a+13d}{a+d}$ or $[r =]\frac{a+16d}{a+13d}$ or $[r =]\sqrt{\frac{a+16d}{a+d}}$
	Clears fractions and expands oe: $a^2 + 26ad + 169d^2$ $= a^2 + 17ad + 16d^2$	**A1**	
	$9ad + 153d^2 = 0$ or $9ad = -153d^2$	**A1**	
	Convincingly derives $a = -17d$ e.g. $9d(a + 17d) = 0$ [therefore] $a = -17d$ oe	**A1**	