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**	

Question	Answer	Marks	Partial Marks
10(a)(ii)	$r = 0.25$ oe	**2**	**M1** $\frac{-17d+13d}{-17d+d}$ or $\frac{-17d+16d}{-17d+13d}$ or $-16d$, $-4d$, $-d$
10(b)	$\frac{q}{1-0.25}=\frac{256}{3}$ oe	**M1**	**FT** *their* 0.25 providing it is between –1 and 1
	$q = 64$	**A1**	
	[$a + d$ = *their* 64] $-17d + d$ = *their* 64 or $a-\frac{a}{17}=$ *their* 64	**DM1**	**dep** on previous **M1**
	$d = -4$ and $a = 68$ oe OR $d = -4$ and $S_{20} = -150d$ oe	**A2**	**A1** for either correct
	$S_{20}=\frac{20}{2}\{2(their68)+19(their(-4))\}$ or $S_{20} = -150($*their* $d)$	**M1**	**FT** *their a* and *d*
	600	**A1**	