Question	Answer	Marks	Partial Marks
11(b)	When $t = 3$, $s = 30$	**B1**	
	$\frac{1}{2}(10+12-\frac{2}{3}k)(k-3)=57-30$ oe or $12k-\frac{k^2}{3}-3\ [-30]=57\ [-30]$ oe	**2**	**M1** for attempt at area using $t=k$
	$k = 6$ or $k = 30$	**2**	**A1** for $-\frac{1}{3}k^2+12k-60[=0]$ or $k^2-36k+180[=0]$ oe
	$k = 6$	**A1**	as v is negative when $k = 30$
12	$\frac{dy}{dx}=-\frac{8}{x^3}+a$ oe	**B1**	
	When $x=2$, $\frac{dy}{dx}=a-1$ soi	**B1**	**FT** on *their* $\frac{dy}{dx}$
	$\frac{-1}{their(a-1)}=-\frac{1}{4}$ or *their* $(a-1) = 4$	**M1**	**FT** on *their* $(a-1)$
	$a=5$	**A1**	
	When $x = 2$, $b=2+4(their\ 18)$ oe	**M1**	**Dep**
	$b = 74$	**A1**	

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