Question	Answer	Marks	Partial Marks
1	$3x+2>8+x \rightarrow x>3$	**B1**	
	$-3x-2>8+x$	**M1**	Correct inequality oe
	$x<-2.5$	**A1**	
2	$x^2+x\left(\frac{2}{3}x-2\right)=9$	**M1**	Eliminate y
	$5x^2-6x-27=0$	**A1**	
	$(x-3)(5x+9)=0$	**M1**	Factorise or formula
	(3, 0)	**A1**	Or both x values
	$\left(-\frac{9}{5},-\frac{16}{5}\right)$	**A1**	
3	Uses $\lg 100=2$ or $3\lg x=\lg x^3$.	**B1**	
	Uses $\lg a+\lg b=\lg ab$ or $\lg a-\lg b=\lg\left(\frac{a}{b}\right)$	**B1**	
	$\lg\left(\frac{100x^3}{y}\right)$	**B1**	Correct final answer
4(a)	$\frac{dy}{dx}=\frac{\cos x-3\sin x}{\sin x+3\cos x}$	**3**	**M1** for attempt at chain rule must have function in numerator and denominator **A1** for denominator **A1** for numerator
(b)	$-2\cos x-3\cos x=\sin x-6\sin x$	**M1**	Expand and collect terms in $\sin x$ and $\cos x$
	$1=\tan x$	**M1**	Use $\frac{\sin x}{\cos x}=\tan x$
	$x=\frac{\pi}{4}$	**A1**	Must be radians
5	$a^5+5a^4bx+10a^3b^2x^2$	**2**	**B1** for powers or for coefficients
	$a^5+\left(a^5+5a^4b\right)x+\left(10a^3b^2+5a^4b\right)x^2$	**2**	**M1** for multiplying to obtain 5 terms **A1** for all correct
	$a^5=32 \rightarrow a=2$	**A1**	
	$32+80b=-208 \rightarrow b=-3$	**A1**	
	$10\times8\times9+5\times16\times-3=c \rightarrow c=480$	**A1**	