

Question	Answer	Marks	Guidance
(a)	Differentiate to obtain $2 \tan x \sec^2 x$	B1	
	Use $\sec^2 x = 1 + \tan^2 x$ to confirm $2 \tan x + 2 \tan^3 x$	B1	AG – necessary detail needed
		2	
(b)	Attempt to use part (a) result to integrate $\tan x + \tan^3 x$	M1	
	Obtain $\frac{1}{2} \tan^2 x$	A1	
	Use relevant identity to integrate $\tan^2 x$	M1	
	Obtain $\sec^2 x - 1$ and hence $\tan x - x$	A1	
	Use limits correctly for integrand of form $k_1 \tan^2 x + k_2 \tan x + k_3 x$	M1	
	Obtain $\sqrt{3} - \frac{1}{12} \pi$	A1	Or exact equivalent
		6	

