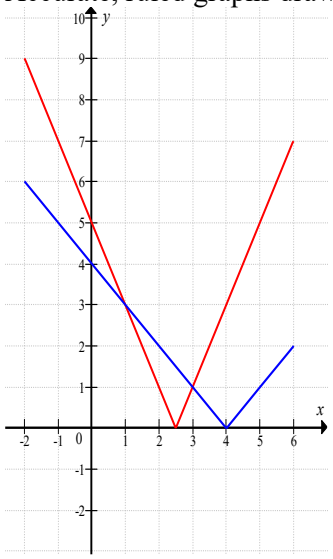
Question	Answer	Marks	Partial Marks
2	Uses $b^2 - 4ac$ correctly: $(2k-1)^2 - 4(k)(k+1)$ [*0 where * is any inequality sign or =]	**M1**	
	Simplifies to $-8k + 1$[*0]	**A1**	
	Critical Value: $k = \frac{1}{8}$ soi	**M1**	**FT** *their* $ak + b$ where a and b are constants
	$k > \frac{1}{8}$ mark final answer	**A1**	
3(a)	Accurate, ruled graphs drawn  	**4**	**M1** for $y = \lvert 4 - x \rvert$: $\vee$ shape with vertex at (4, 0) **A1** Correct graph with y-intercept at (0, 4) **M1** for $y = \lvert 2x - 5 \rvert$: $\vee$ shape with vertex at (2.5, 0) **A1** Correct graph with y-intercept at (0, 5)
3(b)	$x \leq 1$, $x \geq 3$ final answer	**2**	**FT** *their* **(a)** providing at least **M1** awarded and a pair of V-shaped graphs attempted **B1** for exactly two correct critical values or **B1 FT** for exactly two correct FT critical values soi, **FT** *their* **(a)** providing at least **M1** awarded and a pair of V-shaped graphs attempted
4(a)	$\frac{105}{8}$ isw or 13.125 oe	**2**	**B1** for $^{10}C_4(x^2)^6\left(-\frac{1}{2x^3}\right)^4$ oe

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Question	Answer	Marks	Partial Marks
4(b)(i)	$1+4(2\sqrt{2})+6(2\sqrt{2})^2+4(2\sqrt{2})^3+(2\sqrt{2})^4$ soi or $1+4(-2\sqrt{2})+6(-2\sqrt{2})^2+4(-2\sqrt{2})^3$ $+(-2\sqrt{2})^4$ soi	**M1**	
	$1+8\sqrt{2}+48+64\sqrt{2}+64$ or $1-8\sqrt{2}+48-64\sqrt{2}+64$	**A1**	
	Correct difference stated or clearly implied $1+8\sqrt{2}+48+64\sqrt{2}+64-$ $(1-8\sqrt{2}+48-64\sqrt{2}+64)$	**M1**	**dep** on sight of correct expansions with numerical coefficients
	$144\sqrt{2}$ nfww	**A1**	
4(b)(ii)	$\frac{(their\ k)\sqrt{2}}{1+\sqrt{2}}\times\frac{1-\sqrt{2}}{1-\sqrt{2}}=$ $\frac{(their\ k)\sqrt{2}-2their\ k}{-1}$ oe simplified to $2(their\ k)-(their\ k)\sqrt{2}$ mark final answer	**2**	**STRICT FT** of *their* integer value of k **B1 STRICT FT** of *their* integer value of k for $\frac{their\ k\sqrt{2}}{1+\sqrt{2}}\times\frac{1-\sqrt{2}}{1-\sqrt{2}}$
5(a)(i)	$\sec^2 x+2\tan^2 x$ oe and correct completion to $3\tan^2 x+1$ nfww	**2**	**M1** for use of a relationship to form a convincing correct statement from which the answer can be easily determined e.g. $\sec^2 x+\frac{2\sin^2 x}{\cos^2 x}$ or $\frac{1}{\cos^2 x}+2\tan^2 x$
5(a)(ii)	$\tan x=[\pm]1$ soi	**M1**	**FT** $\tan x=[\pm]\sqrt{\frac{4-their1}{their3}}$ providing $\frac{4-their1}{their3}>0$
	$[x=]\frac{\pi}{4},-\frac{\pi}{4}$ or $\pm0.785[39\ldots]$ nfww and no other solutions	**A2**	**A1** for each, ignoring extra solutions

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