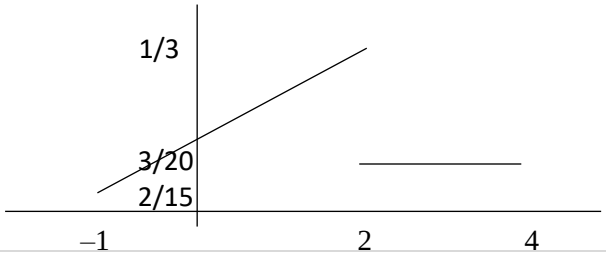
Number		
4 (a)		M1 A1
		(2)
(b)	$[\mathrm{P}(G\text{,, }2)=]1-2\times\frac{3}{20}[=0.7]$ or $\frac{1}{2}\times3\times\left(\frac{2}{15}+\frac{1}{3}\right)$ or $\frac{1}{15}\int_{-1}^{2}(g+3)\,\mathrm{d}g[=0.7]$ or $\frac{1}{30}\times2^2+\frac{1}{5}\times2+\frac{1}{6}[=0.7]$ or $\left[\mathrm{P}\left(G\text{,, }\frac{1}{2}\right)\right]=\frac{1}{2}\times1.5\times\left(\frac{2}{15}+\frac{3.5}{15}\right)[=0.275]$ or $\frac{1}{15}\int_{-1}^{0.5}(g+3)\,\mathrm{d}g[=0.275]$ or $\frac{1}{30}\times0.5^2+\frac{1}{5}\times0.5+\frac{1}{6}[=0.275]$ or $\left[\mathrm{P}\left(\frac{1}{2}\text{,, }G\text{,, }2\right)=\right]\ \frac{1}{2}\times1.5\times\left(\frac{7}{30}+\frac{1}{3}\right)[=0.425]$ or $\frac{1}{15}\int_{0.5}^{2}(g+3)\,\mathrm{d}g[=0.425]$ or $\frac{1}{30}\times\left(2^2-0.5^2\right)+\frac{1}{5}\times(2-0.5)[=0.425]$	M1
	$[\mathrm{P}(1\text{,, }2G\text{,, }6\,|\,G\text{,, }2)=]\dfrac{\mathrm{P}\left(\frac{1}{2}\text{,, }G\text{,, }2\right)}{\mathrm{P}(G\text{,, }2)}=\dfrac{0.425}{0.7}$ or $1-\dfrac{0.275}{0.7}$ oe	M1M1
	$=\frac{17}{28}$ or $0.607\ldots$ awrt 0.607	A1
		(4)
(c)	$\left[\mathrm{E}\left(H^2\right)=\right]2.4+12^2[=146.4]$	M1
	$[\mathrm{E}(G)=]\int_{-1}^{2}\frac{1}{15}\left(g^2+3g\right)\mathrm{d}g+\int_{2}^{4}\frac{3}{20}g\ \mathrm{d}g$	M1
	$[\mathrm{E}(G)=]\left(\frac{1}{15}\left(\frac{1}{3}g^3+\frac{3}{2}g^2\right)\right)_{-1}^{2}+\left(\frac{3}{40}g^2\right)_{2}^{4}$	M1
	$=\frac{1}{15}\left(\frac{8}{3}+\frac{12}{2}+\frac{1}{3}-\frac{3}{2}\right)+\left(\frac{48}{40}-\frac{12}{40}\right)[=1.4]$	dM1
	$\left[\mathrm{E}\left(2H^2+3G+3\right)=\right]2\times\text{"146.4"}+3\times\text{"1.4"}+3$	M1
	$=300$	A1 (6)
		Total 12

	Notes	
(a)	**M1**	for correct shape $\left(g=\frac{3}{20}\right.$ must be below $\left.\frac{1}{3}\right)$ with the lines not joining at $x = 2$ and none below/touch the x -axis. Ignore any broken/dotted lines drawn
	A1	for fully correct graph with labels on the x axis
(b)	**M1**	For a correct method to find $\mathrm{P}(G\text{,, }2)$ or $\mathrm{P}\left(G\text{,, }\frac{1}{2}\right)$ or $\mathrm{P}\left(\frac{1}{2}\text{,, }G\text{,, }2\right)$ May be implied by $0.7/\frac{7}{10}$ or $0.425=\frac{17}{40}$ or $0.275/\frac{11}{40}$
	M1	for $\frac{p}{0.7}$ where $0 < p < 0.7$ or $\frac{0.425}{q}$ where $0.425 < q < 1$ or $1-\frac{0.275}{r}$ where $0.275 < r < 1$ Allow un-simplified probabilities
	M1	For $\frac{\mathrm{P}\left(\frac{1}{2}\text{,, }G\text{,, }2\right)}{\mathrm{P}(G\text{,, }2)}$ or a correct ratio of probabilities
	A1	$\frac{17}{28}$ oe or awrt 0.607
(c)	**M1**	for a correct method to find $\mathrm{E}\left(H^2\right)$
	M1	for realising $\int x\mathrm{f}(x)\mathrm{d}x$ on both functions and adding together. Ignore limits
	M1	for attempting to integrate ($x^n \to x^{n+1}$) at least one part of $x\mathrm{f}(x)$
	dM1	dep on previous M1 being awarded. For use of correct limits in one part of $x\mathrm{f}(x)$ If working not shown, then this may be implied by 0.5 or 0.9 or 1.4. If integration is incorrect then working must be shown.
	M1	For using $2\times\text{"their }\mathrm{E}\left(H^2\right)\text{"}+3\text{"their }\mathrm{E}(G)+3$, provided $\mathrm{E}\left(H^2\right)$ and $\mathrm{E}(G)$ have been shown. **NB** You may have to check their answer if no working is shown for $2\times\text{"their }\mathrm{E}\left(H^2\right)\text{"}+3\text{"their }\mathrm{E}(G)+3$
	A1	Cao