Question	Scheme	
1 (a)	0.85	B1
		(1)
(b)	$3X-3<X+2\rightarrow X<2.5$	M1
	$[\mathrm{P}(X<2.5)=]$ 0.5	A1
		(2)
(c)	$[\mathrm{E}(X)=]1\times0.3+2\times0.2+3\times0.35+4\times0.15=$	M1
	2.35	A1
		(2)
(d)	$\left[\mathrm{E}\left(X^2\right)=\right]1^2\times0.3+2^2\times0.2+3^2\times0.35+4^2\times0.15\left[=6.65\right]$	M1
	$[\mathrm{Var}(X)=]$"6.65"−"2.35"^{2}	M1
	= 1.1275*	A1*
		(3)
(e)	$\left[\mathrm{Var}\left(5-2X\right)=\right]4.51$	B1
		(1)
		Total 9
	Notes	
	Look out for answers given next to the questions	
(a)	B1 oe Must be identified as answer to part (a) (not just seen anywhere in the script). Ignore their label.	
(b)	M1 for $X < 2.5$ (condone $X > 2.5$, $X = 2.5$) <u>or</u> $X \leq 2$ <u>or</u> for identifying $X = 1$ and $X = 2$ (may be circled, ticked, or otherwise clearly identified as the only 2 x-values that satisfy the inequality) <u>or</u> 0.3 + 0.2	
	A1 oe Correct answer scores 2 out of 2.	
(c)	M1 for an attempt to find E(X) with at least 3 correct products or terms with intention to add 0.3 + 0.4 + 1.05 + 0.6 (may be seen in table at the start of the question) Division by 4 or any k ($k \neq 1$) is M0	
	A1 oe Correct answer scores 2 out of 2	
(d)	M1 for an attempt to find E(X^2) with at least 3 correct products or terms with intention to add 0.3 + 0.8 + 3.15 + 2.4 (may be seen in table at the start of the question or elsewhere) Division by 4 or any k ($k \neq 1$) is M0 6.65 on its own does not imply this mark	
	M1 for $6.65 - 2.35^2$ ft their E(X) and E(X^2). A full calculation scores M1M1 e.g. $1^2\times0.3+2^2\times0.2+3^2\times0.35+4^2\times0.15-5.5225$	
	A1*cso dependent on both M marks for a fully correct expression for Var(X) leading to correct given answer 1.1275 with no incorrect working seen. $6.65-2.35^2$ = 1.1275 on its own scores M0M1A0	
(e)	B1 for 4.51 oe	