Question Number	Scheme	Marks
3(a)	$[\mathrm{E}(X)=](-4)\times r+(-2)\times s[+0\times t]+2\times s+6\times r[=0.36]$ or $2r[=0.36]$	M1
	$r=0.18$ *	A1*
		(2)
(b)	$[\mathrm{E}(X^2)=](-4)^2\times r+(-2)^2\times s[+0^2\times t]+2^2\times s+6^2\times r$ or $52r+8s$ or $9.36+8s$	M1
	$[\mathrm{Var}(X)=]52r+8s-0.36^2[=10.8304]$ or $[\mathrm{Var}(X)=]9.36+8s-0.36^2[=10.8304]$ or $8s=1.6$	M1
	$s=0.2$	A1
	$2\times 0.18+2\times "s"+t=1$ or $"0.76"+t=1$	M1
	$t=0.24$	A1
		(5)
(c)	$[\mathrm{E}(7-5X)=7-5\times 0.36=]5.2$	B1
	$[\mathrm{Var}(7-5X)=](-5)^2\times 10.8304$ or $297.8-5.2^2$	M1
	$=270.76$ awrt 271	A1
		(3)
(d)	$2X^2+5X-7>0$ or $2X^2$: 32. 8, 0, 8, 72	M1
	$[(X-1)(2X+7)>0]$ so $X>1$ or $X<-3.5$ or $7-5X$: 27, 17, 7, –3, –23	M1
	Need –4, 2 and 6 or $2r+s$ or $2\times 0.18+"0.2"$	M1
	0.56	A1
		(4)

	Notes		Total 14
(a)	**M1**	for a correct method to find E(X) e.g. $-4r-2s$ [$+0t$] $+2s+6r$ or $2r=\ldots$	
	A1*	Answer is given so no incorrect working must be seen	
(b)	**M1**	for a correct method to find E(X^2) e.g. $16r+4s$ [$+0t$] $+4s+36r$ May be seen embedded in a calculation of Var(X)	
	M1	for a correct method to find Var(X) in terms of s and r	
	A1	$s=0.2$	
	M1	for use of the sum of the probabilities = 1 You may need to check if no working shown $(t=0.64-2\times "s")$	
	A1	$t=0.24$	
(c)	**B1**	Cao	
	M1	For $(-5)^2\times 10.8304$ or $297.8-5.2^2$	
	A1	awrt 271	
(d)	**M1**	for a correct inequality > 0 Can be implied by $x=-3.5$ and $x=1$or all values of $2X^2$ stated. May be implied by all values of $2X^2+5X-7$: 5, –9, –7, 11, 95	
	M1	for $X>1$ or $X<-3.5$ Can be implied by identifying –4, 2 and 6 or all values of $7-5X$ stated. May be implied by all values of $2X^2+5X-7$: 5, –9, –7, 11, 95	
	M1	for identifying –4, 2 and 6 If seen as a calculation then ft their s May be seen in parts e.g. 0.18 + "0.2" and 0.18	
	A1	Oe	