Question	Scheme	Marks
2(a)	$\frac{3}{10}d-\frac{1}{75}d^2-\frac{2}{3}=1$	M1
	$45d-2d^2-100=150$ **or** $\frac{3}{10}d-\frac{1}{75}d^2-\frac{5}{3}=0\rightarrow 2d^2-45d+250=0$*	A1*
		(2)
(b)	$\mathrm{P}(1<H<4.5)=\left(\frac{4.5}{6}-\frac{1}{3}\right)-\left(\frac{1}{48}\right)\left[=\frac{19}{48}\text{ or }0.39583...\right]$	M1
	$\mathrm{P}(1<H<1.5)\left[=\left(\frac{1.5^2}{48}\right)-\left(\frac{1}{48}\right)=\frac{5}{192}\text{ or }0.02604...\right]$	M1
	$\mathrm{P}(H<1.5\mid 1<H<4.5)=\frac{"0.02604..."}{"0.3958..."}$	M1
	$=\frac{5}{76}$ or 0.06578… awrt **<u>0.0658</u>**	A1
		(4)
(c)	$[\mathrm{f}(h)=]\begin{cases}\frac{h}{24} & 0<h\text{,,}4\\ \frac{1}{6} & 4<h\text{,,}5\\ \frac{3}{10}-\frac{2}{75}h & 5<h\text{,,}d\\ 0 & \textit{otherwise}\end{cases}$	M1 M1 A1
		(3)
	Notes	**Total 9**
(a)	**M1** for $\frac{3}{10}d-\frac{1}{75}d^2-\frac{2}{3}=1$	
	A1* cso at least one step seen before given answer e.g. removing the denominator or correct 3 term quadratic = 0	
(b)	**M1** correct method to find $\mathrm{P}(1<H<4.5)$ implied by $\frac{19}{48}$ or awrt 0.396	
	M1 for writing or finding $\mathrm{P}(1<H<1.5)$ implied by $\frac{5}{192}$ or awrt 0.026	
	M1 for $\frac{p}{"0.3958"}$ where $0<p<$ "0.3958"	
	A1 awrt 0.0658	
(c)	**M1** for one of row 1, 2 or 3 correct. Allow any letters. Condone missing/incorrect range	
	M1 for any two rows correct with ranges. Allow any letters and < for ,, signs	
	A1 Fully correct. all the same letter in rows 1 to 3 Allow < for ,, signs condone $d = 10$ but not $d = 12.5$	