Question	Scheme	Marks
5 (a)	$\mathrm{P}(X<18) = \mathrm{P}\left(Z < \pm\left(\frac{18-15}{2}\right)\left[=\pm 1.5\right]\right)$	M1
	$= 0.9332$ awrt 0.933	A1
		(2)
(b)	$\frac{x-15}{2} = 0.2533$	M1B1
	$x = 15.506\ldots$ awrt 15.5	A1
		(3)
(c)	$\mathrm{P}(T > \mu - 10\ ) = 0.975$	M1
	$\frac{(\mu \pm 10)-\mu}{\sigma} = \pm 1.96 \Rightarrow \sigma = \frac{10}{1.96}\left[=5.10...\right]$	M1
	$\mathrm{P}(T > \mu - 5\ ) = \mathrm{P}\left(Z > \frac{\mu-5-\mu}{"5.10..."}\left[=-0.98\right]\right)$ [= 0.836…]	M1
	$\mathrm{P}(T > \mu - 5 \mid T > \mu - 10\ ) = \frac{"0.836..."}{"0.975"}$	M1
	$= 0.8579...$ awrt 0.858	A1
		(5)

	Notes		**Total 10**
(a)	**M1**	for standardising correctly May be implied by ±1.5	
	A1	awrt 0.933 (Do not ISW)	
(b)	**M1**	for correct standardisation = to a z value such that $0.25 \text{ ,, } \lvert z \rvert \text{ ,, } 0.26$	
	B1	for use of awrt ± 0.2533	
	A1	awrt 15.5	
(c)	**M1**	for the correct probability of 0.975 – may be seen as the denominator of the fraction. May be implied by use of $\lvert z \rvert = 1.96$ or better	
	M1	For $\frac{\mu+10-\mu}{\sigma} = 1.96$ or $\frac{\mu-10-\mu}{\sigma} = -1.96$, leading to a value for σ May be implied by ±0.98	
	M1	for a correct method to find $\mathrm{P}(T > \mu - 5)$ using their value for σ May be implied by –0.98 If $\mathrm{P}(T < \mu + 5)$ is calculated then this may be implied by 0.98	
	M1	for $\frac{p}{0.975}$ where $0.5 < p < 0.975$ (must be a probability not their z value) If the denominator is incorrect only follow through their $\mathrm{P}(T > \mu - 10\ )$ if clearly labelled and > 0.95	
	A1	awrt 0.858	