Question Number	Scheme	Marks
6.		
(a)	$\overline{T} \sim \mathrm{N}(4, \frac{4}{35})$	M1 A1
		(2)
(b)	$\overline{K} \sim \mathrm{N}(\lambda, \frac{\lambda}{40})$	M1
	$2 \times 2.5758 \times \sqrt{\frac{\lambda}{40}} = 2.6$	B1 M1
	λ = awrt **10.2**	A1
		(4)
(c)	$2 \times 0.99 \times 0.01$	M1
	= **0.0198**	A1
		(2)
		Total 8

	Notes
(a)	M1 for Normal distribution A1 for correct mean and variance (allow N(4, awrt 0.114))
(b)	M1 for use of $\frac{\lambda}{40}$ if $\lambda = \sigma$ is used, then M0 B1 for ±2.5758 (may be implied by sight of 10.188…) M1 for use of $2 \times z \times \frac{'\sigma'}{\sqrt{40}} = 2.6$ with $\lvert z \rvert > 2$ A1 awrt 10.2 (an answer of 10.15…or awrt 10.2 on its own scores M1B0M1A1) **SC:** Use of $\sqrt{\lambda}$ instead of λ leading to an answer of awrt 3.19… scores M0B1M1A0
(c)	M1 for $2p(1-p)$ for any p $0 < p < 1$ A1 0.0198