Question Number	Scheme	Marks
5. (a)	$P(W > 70) = P\left(Z > \frac{70-80}{8}[=-1.25]\right)$	M1
	$= P(Z > -1.25)$ or $P(Z < 1.25)$	A1
	$= 0.8944$ awrt **0.894**	A1
		(3)
(b)	$P(W < k) = 0.85$ or $P(W > k) = 0.15$	B1
	$\pm\left(\frac{k-80}{8}\right) =$ **1.0364**	M1 B1
	$k = 88.29\ldots$ awrt **88.3**	A1
		(4)
(c)	$P(W < 66) = P\left(Z < \frac{66-80}{8}[=-1.75]\right)[= 0.0401$ (calc 0.040059…)]	M1
	$0.25 \times P(Z < -1.75)\left[= 0.010025\ (\text{calc}\, 0.0100147...)\right]$ or $0.25 \times (1 - P(Z < 1.75))$	dM1
	$\frac{y-80}{8} =$ **–2.32**(63)	M1 A1
	$y = 61.389\ldots$ awrt **61.4**	A1
		(5)
	Notes	**Total 12**

(a)
M1 for standardising with 70, 80 and 8 (allow $\pm$)
1st A1 $z = \pm 1.25$
2nd A1 awrt 0.894 (calc 0.894350…) **NB** do not ISW so an answer of 0.1056 is A0

(b)
1st B1 for either correct probability statement. Allow „ for < and …for >
(may be implied by z = awrt 1.04)
M1 standardising with 80, 8 and equating to z, where $1 < |z| < 2$
2nd B1 $z = \pm 1.0364$ or better (calc 1.036432…)
A1 awrt 88.3 (calc 88.291459…)
NB awrt 88.3 implies 1st B1 and M1 but not the 2nd B1 they could get B1M1B0A1
(Answer only 88.291 to 88.292 scored 4 out of 4)

(c)
1st M1 standardising with 66, 80 and 8 (allow $\pm$) or seeing awrt 0.0401 in working
2nd dM1 (dep on 1st M1) $0.25 \times$"their $P(Z < -1.75)$" or 0.0401 – 0.030075 or seeing
$\left[0.75 \times 0.0401 + 0.9599 =\right]$ 0.9899…
3rd M1 for standardising and equating to z, where $|z| > 2$
1st A1 correct standardisation equation with compatible signs and 2.32 „ $|z|$ „ 2.34
2nd A1 awrt 61.4 (allow awrt 61.3)