Question Number	Scheme	Marks
7 (a)	$\mathrm{P}(X > 210) = \mathrm{P}\left(Z > \dfrac{210-180}{20}\right)$	M1
	$= \mathrm{P}(Z > 1.5) = 1 - 0.9332 = 0.0668$ So 6.68%*	A1*
		(2)
(b)	$\dfrac{n-180}{20} = -1.0364$	M1 B1
	$n = 159.272$ awrt 159	A1
		(3)
(c)(i)	$\mathrm{P}(Y < \mu - 5 \mid Y < \mu) = \dfrac{1-0.7967}{0.5}$	M1
	$= 0.4066$ awrt 0.407	A1
		(2)
(ii)	$\dfrac{5}{\sigma} = 0.83$	M1
	$\sigma = \dfrac{5}{0.83} = 6.02...$ So $\sigma = 6$ *	A1*
		(2)

	Notes	Total 9
(a)	**M1**	For standardising using 210, 180 and 20 (Standardidsation must be seen)
	A1*	Answer is given so no incorrect working can be seen 0.0668 is sufficent for this mark
(b)	**M1**	For standardising using any letter, 180 and 20 = z value, where $1 < \lvert z \rvert < 1.5$
	B1	For –1.0364 or better Allow 1.0364 or better
	A1	awrt 159 **NB** M1B0A1 is possible
(c)(i)	**M1**	For a correct method to find the conditional probability
	A1	awrt 0.407
(ii)	**M1**	For use of 0.83 or better (calc 0.82989…) in an equation with σ only. Allow $\dfrac{\mu+5-\mu}{\sigma} = 0.83$
	A1*	Answer is given so no incorrect working can be seen awrt 6.02 – awrt 6.025 is sufficient for this mark