Question Number	Scheme	Marks
6. (i)	$z = 1.25$	B1
	$\frac{187.5-\mu}{\sigma}=1.25$	M1 M1 A1
	$187.5-\mu=1.25\sigma$	
	$\mu = 225p$	M1
	$\sigma=\sqrt{225p(1-p)}$	M1
	$(187.5-225p)^2=(1.25)^2\times225p(1-p)$ or $(150-180p)^2=225p(1-p)$ (o.e.)	M1
	e.g. $900(5-6p)^2=225(p-p^2) \Rightarrow 4(25-60p+36p^2)=p-p^2$	A1*
	Leading to $145p^2-241p+100=0$ *	
(ii)	$[(29p-25)(5p-4)=0\Rightarrow]$ $p=0.8$ or $p=\frac{25}{29}$ (accept: 0.862(0689…))	M1
	[p =] 0.8 because 0.862 gives a mean greater than 188 (oe)	A1
		(10)
		Total 10

	Notes
(i)	**B1:** for 1.25 or better (calculator gives: 1.25027…)
	1st M1: for attempting to use a continuity correction i.e. for sight of 188 ± 0.5
	2nd M1: for standardising using μ and σ or np and $\sqrt{np(1-p)}$ (Condone letter n or any integer > 0)
	1st A1: for a correct equation with compatible signs, allow 1.250... If using a value for n it must be 225
	3rd M1: for $\mu = 225p$ seen at any stage in the working.
	4th M1: for $\sigma=\sqrt{225p(1-p)}$ seen at any stage in the working. Must be for σ not $\sigma^2 = 225p(1-p)$
	5th M1: for squaring to get a quadratic equation in p
	2nd A1*: dep on all previous Ms and use of 1.25 (with correct sign) for at least 1correct intermediate step from a correct quadratic equation e.g one of those in scheme for 5th M1
(ii)	**M1:** for solving the quadratic correctly–leading to p = … or implied by 0.8 or awrt 0.862
	A1: for 0.8 and a correct reason to eliminate 0.862

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