

Question			Answer	Marks	AO	Guidance	
12			$p = 0.1511$ to 4 s.f.	B1	3.1b		OR
			$X \sim \text{Bin}(10000, 0.1511)$	M1	3.3	soi	B1 $p = 0.1511$ to 4 s.f.
			$np = 1511$ $np(1 - p) = 1283$			Both; allow 3 s.f.	B1 $X \sim N(1511, 1283^2)$
			$1511 + 1.96 \times \sqrt{1283}$ (or $1511 + 2 \times \sqrt{1283}$)	M1	3.4	their ' np ' + $2 \times \sqrt{\text{their}' np(1 - p)}$ or their ' np ' + $1.96 \times \sqrt{\text{their}' np(1 - p)}$	M1 $P(X < m) = 0.975$ Then use inverse normal to find...
			$= 1581$ (or 1583) Minimum m is 1581	A1 FT A1	1.1 1.1	FT <i>their</i> 3sf or better values Conclusion in context Allow 1580 to 1585	A1 FT 1581.203931... BC A1 Minimum m is 1581
				[5]			