

Q	Marking instructions	AO	Marks	Typical solution
15(a)	Obtains 8.4	1.1b	B1	8.4
	Subtotal		1	

Q	Marking instructions	AO	Marks	Typical solution
15(b)	Shows how to obtain 6.93 by using the correct formula for variance AG	1.1b	B1	Variance = $48 \times 0.175 \times 0.825$ = 6.93
	Subtotal		1	

Q	Marking instructions	AO	Marks	Typical solution
15(c)	Obtains AWFW [0.674, 0.6742]	1.1b	B1	0.6742
	Subtotal		1	

Q	Marking instructions	AO	Marks	Typical solution
15(d)	Finds $P(X \leq 5) = [0.132, 0.133]$ or $P(X \leq 6) = [0.241, 0.242]$ or $P(X > 6) = [0.758, 0.759]$ or $P(X \geq 6) = [0.867, 0.868]$ PI by correct answer Condone incorrect or no labels	1.1a	M1	$P(X \geq 6) = 1 - P(X \leq 5)$ = $1 - 0.1325$ = 0.8675
	Obtains AWFW [0.867, 0.868]	1.1b	A1	
	Subtotal		2	

Q	Marking instructions	AO	Marks	Typical solution
15(e)	Finds $P(X \leq 15) = [0.994, 0.9941]$ or $P(X \leq 8) = [0.531, 0.532]$ PI by correct answer Condone incorrect or no labels	1.1a	M1	$P(9 \leq X \leq 15)$ = $0.9940 - 0.5317$ = 0.4623
	Obtains AWFW [0.462, 0.4631]	1.1b	A1	
	Subtotal		2	

Q	Marking instructions	AO	Marks	Typical solution
15(f)	<p>States that the model is appropriate because</p> <ol style="list-style-type: none"> 1. The 48 seats and 17.5% passengers travelling for business match the values of n and p in the model or 2. Only business or non-business passenger 3. Business/non-business passengers occur independently <p>or</p> <p>states that the model is not appropriate because</p> <ol style="list-style-type: none"> 1. The plane may not be full so n might change or might not be 48 2. The p might change or is not fixed or might not be 0.175 due to eg peak or holiday periods 3. Not independent because passengers might book seats in groups <p>Do not allow probability being independent</p>	3.5b	E1	<p>Model is appropriate because 48 seats and 17.5% passengers travelling for business match the values of n and p.</p> <p>However the plane may not be full so n may not be 48.</p>
	<p>Makes a second non-contradictory comment in context from the list above, about the suitability of the model</p>	3.5b	E1	
	Subtotal		2	

	Question 15 Total		9	
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