Sig figs: "0.348 (3 sf)" means "answer that rounds to 0.348", ISW. eg 0.347652 = 0.35 scores A1, 0.348 = 0.35 scores A1, but 0.35 alone scores A0
Other forms for probabilities Allow eg 20% or 1 in 5, but not odds eg 1:4

Question			Answer	Mark	AO	Guidance
1	(a)	DR	$\frac{x(x+2)-(x-1)(x+1)}{(x+1)(x+2)}$ or $\frac{x^2+2x-x^2+1}{x^2+3x+2}$ oe (= 0)	M1 M1	1.1 1.1	M1 for $x(x+2)-(x+1)(x-1)$ oe Multiply out brackets. Allow one error Ignore denominator even if "= 0"
			$x = -\frac{1}{2}$	A1	1.1	NB correct with no working: SC B1
			Alternative method $x(x+2) = (x+1)(x-1)$ $x^2 + 2x = x^2 - 1$ or $2x = -1$ oe $x = -\frac{1}{2}$	M1 M1 A1		M1 for attempt "cross-multiply". Multiply out brackets. Allow one error
				[3]		
1	(b)		**DR** Solve quadratic in $\frac{1}{x^3}$ or x^3 or u $(= x^3$ or $\frac{1}{x^3})$ using any correct method.	M1	3.1a	or cubic in x Condone quadratic in x with $x = \frac{1}{x^3}$ or $x = x^3$ Must see attempt at correct method for this mark Allow arithmetical errors
			$\frac{1}{x^3}$ (or u) = 1 & $-\frac{1}{8}$ or x^3 (or u) = 1 & –8 or correct factorisation of quadratic	B1	1.1	Can be scored without M1 Condone $x = 1$, $-\frac{1}{8}$ or $x = 1, -8$ Ignore $x^3 = 0$, if seen, for this mark
			$x = 1$& $x = -2$ with no extras	B1f	1.1	ft their x^3 or $\frac{1}{x^3}$ If also $x = 0$, B0 NB correct with no working: M0B0B1
				[3]		
1	(c)		**DR** eg $(x^2 - 7)\ln 3 = \ln\frac{1}{243}$ or $x^2 - 7 = \log_3\left(\frac{1}{243}\right)$ or $3^{x^2-7} = 3^{-5}$ or $x^2 - 7 = -5$ or $3^{x^2} = 3^2$	M1	3.1a	Condone incorrect or omitted brackets Any correct step after log(both sides) or ANY correct step using indices
			$x = \pm\sqrt{2}$ or ±1.41 (3 sf)	A1	1.1	NB correct with no working or T & I: SC B1