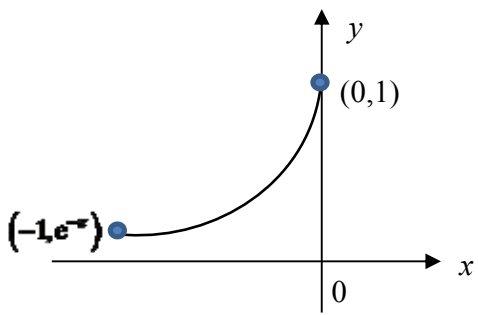


ANNEX B

SRJC FM JC2 Prelim Examination Paper 2

QN	Topic	Answers																														
1	Numerical Methods I	(ii) $x_1 = 0.867$, underestimation																														
2	Further Complex Numbers	(i) $\theta = \pi/3$																														
3	Mathematical Induction	(i) $\rho^* = \frac{1-\sqrt{5}}{2}, \rho = \frac{1+\sqrt{5}}{2}$																														
4	Linear Spaces	(iii) 3, $\left\{ \begin{pmatrix} -1 \\ -1 \\ -1 \\ 1 \end{pmatrix} \right\}$																														
5	Second Order DE	(ii) $y = e^{-e^x} \left[A \cos e^x + B \sin e^x \right] - \frac{6}{85} \cos 2e^x - \frac{7}{85} \sin 2e^x$																														
6	Further Application of Integration	(b)(i)  (ii) 0.73367																														
7	Geometric Distribution	(i) The result of each attempt is independent of any previous result. (ii) 0.216 (iii) least $n = 6$																														
8	Continuous RV	(ii) 3 (iii) 0.1563 (iv) 37.799, 40, process (II)																														
9	Non-Parametric Tests	(i) <table><tr><td>Agent</td><td>A</td><td>B</td><td>C</td><td>D</td><td>E</td><td>F</td><td>G</td><td>H</td><td>I</td></tr><tr><td>Diff.</td><td>+3</td><td>+4</td><td>+2</td><td>-4</td><td>+11</td><td>-2</td><td>+6</td><td>0</td><td>+5</td></tr><tr><td>Rank</td><td>3</td><td>4.5</td><td>1.5</td><td>4.5</td><td>8</td><td>1.5</td><td>7</td><td>NA</td><td>6</td></tr></table>	Agent	A	B	C	D	E	F	G	H	I	Diff.	+3	+4	+2	-4	+11	-2	+6	0	+5	Rank	3	4.5	1.5	4.5	8	1.5	7	NA	6
Agent	A	B	C	D	E	F	G	H	I																							
Diff.	+3	+4	+2	-4	+11	-2	+6	0	+5																							
Rank	3	4.5	1.5	4.5	8	1.5	7	NA	6																							

		(ii) better ranking (iii) no assumption on the distribution of the ranking (iv) p-value = 0.03000
10	Further Hypothesis Testing	(i) (7410.97, 7433.37), assume that X follows a normal distribution. (ii) do not reject H_0 (iii) There is a probability of 0.05 that the interval will not enclose the actual value of μ . (iv) p-value = 0.0168, reject H_0 .
11	Poisson Distribution	(ii) 6, 6 (iii) 31.39 (iv) 0.632 (v) 0.012588, reject H_0