

SRM Institute of Science and Technology
College of Engineering and Technology
Kattankulathur-603 203
Department of Mathematics
21MAB301T-Probability and Statistics

Sl.No.	Tutorial Sheet - 1	Answer																								
1	<p>Calculate the coefficient of correlation between x and y from the following table:</p> <table><tr><td>x</td><td>1</td><td>3</td><td>5</td><td>8</td><td>9</td><td>10</td></tr><tr><td>y</td><td>3</td><td>4</td><td>8</td><td>10</td><td>12</td><td>11</td></tr></table>	x	1	3	5	8	9	10	y	3	4	8	10	12	11	0.97										
x	1	3	5	8	9	10																				
y	3	4	8	10	12	11																				
2	<p>Find coefficient of correlation if $\text{Cov}(x, y) = -16.5$, $\text{Var}(x) = 2.89$ and $\text{Var}(y) = 100$</p>	-0.975																								
3	<p>A panel of judges A and B graded seven debaters and independently awarded the following marks:</p> <table><tr><td>Debator</td><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td></tr><tr><td>Marks by A</td><td>40</td><td>34</td><td>28</td><td>30</td><td>44</td><td>38</td><td>31</td></tr><tr><td>Marks by B</td><td>32</td><td>39</td><td>26</td><td>30</td><td>38</td><td>34</td><td>28</td></tr></table> <p>Can you tell both judges are graded equally?</p>	Debator	1	2	3	4	5	6	7	Marks by A	40	34	28	30	44	38	31	Marks by B	32	39	26	30	38	34	28	0.7
Debator	1	2	3	4	5	6	7																			
Marks by A	40	34	28	30	44	38	31																			
Marks by B	32	39	26	30	38	34	28																			
4	<p>Calculate Spearman's coefficient of rank correlation for the following data:</p> <table><tr><td>X</td><td>53</td><td>98</td><td>95</td><td>81</td><td>75</td><td>61</td><td>59</td><td>55</td></tr><tr><td>Y</td><td>47</td><td>25</td><td>32</td><td>37</td><td>30</td><td>40</td><td>39</td><td>45</td></tr></table>	X	53	98	95	81	75	61	59	55	Y	47	25	32	37	30	40	39	45	-0.905						
X	53	98	95	81	75	61	59	55																		
Y	47	25	32	37	30	40	39	45																		
5	<p>: Calculate coefficient of rank correlation for the following data:</p> <table><tr><td>X</td><td>48</td><td>33</td><td>40</td><td>9</td><td>16</td><td>16</td><td>65</td><td>24</td><td>16</td><td>57</td></tr><tr><td>Y</td><td>13</td><td>13</td><td>24</td><td>6</td><td>15</td><td>4</td><td>20</td><td>9</td><td>6</td><td>19</td></tr></table>	X	48	33	40	9	16	16	65	24	16	57	Y	13	13	24	6	15	4	20	9	6	19	0.733		
X	48	33	40	9	16	16	65	24	16	57																
Y	13	13	24	6	15	4	20	9	6	19																