


No.	Soalan Questions	Markah Marks																																																												
1	<p>The population of interest in this study is the Australian Red Handfish. Here, the Australian government is interested in finding the factors that influence the endanger life of Australian Red Handfish causing their death. For the purpose of this study, the fishes are randomly selected and information such as length, distribution, species and ages are recorded.</p> 																																																													
a)	<p>The length of the fish was measured for each randomised samples. Summarize the length data using measures of central tendency and variability, frequency, percent frequency, cumulative frequency, a plot of histogram with normal curve on it.</p> <p>1st sampling (12 January 2020)</p> <table><tr><td>3.25</td><td>6.32</td><td>4.25</td><td>7.54</td><td>3.31</td><td>1.02</td><td>3.32</td><td>4.21</td><td>3.08</td><td>4.44</td></tr><tr><td>4.56</td><td>6.66</td><td>8.31</td><td>2.22</td><td>3.35</td><td>1.18</td><td>3.35</td><td>3.36</td><td>5.00</td><td>6.56</td></tr></table> <p>2nd sampling (15 April 2020)</p> <table><tr><td>6.32</td><td>5.54</td><td>7.65</td><td>3.35</td><td>3.00</td><td>1.45</td><td>3.36</td><td>4.47</td><td>5.99</td><td>2.45</td></tr><tr><td>5.32</td><td>5.88</td><td>7.41</td><td>3.74</td><td>1.47</td><td>1.69</td><td>5.36</td><td>4.85</td><td>3.69</td><td>5.12</td></tr></table> <p>3rd sampling (13 July 2020)</p> <table><tr><td>2.32</td><td>4.45</td><td>2.21</td><td>1.66</td><td>7.99</td><td>8.45</td><td>2.35</td><td>4.56</td><td>3.65</td><td>5.01</td></tr><tr><td>2.32</td><td>1.24</td><td>5.02</td><td>7.12</td><td>6.41</td><td>2.35</td><td>5.32</td><td>4.03</td><td>5.01</td><td>7.45</td></tr></table>	3.25	6.32	4.25	7.54	3.31	1.02	3.32	4.21	3.08	4.44	4.56	6.66	8.31	2.22	3.35	1.18	3.35	3.36	5.00	6.56	6.32	5.54	7.65	3.35	3.00	1.45	3.36	4.47	5.99	2.45	5.32	5.88	7.41	3.74	1.47	1.69	5.36	4.85	3.69	5.12	2.32	4.45	2.21	1.66	7.99	8.45	2.35	4.56	3.65	5.01	2.32	1.24	5.02	7.12	6.41	2.35	5.32	4.03	5.01	7.45	5
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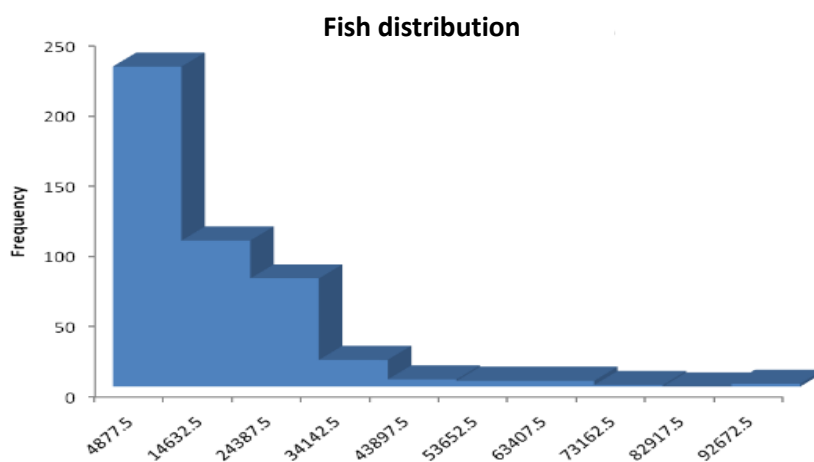
4th sampling (20 October 2020)

7.41 7.45 9.10 5.68 1.22 4.56 3.56 3.35 3.78 4.09
1.54 4.98 5.24 3.68 3.45 4.05 6.45 3.30 4.15 7.87

- b) The variable distribution is a continuous variable and hence descriptive statistics is computed for this variable and the species is a nominal variable and therefore, frequency distribution is constructed for species variable. The summary statistics and graphs for these two variables are given below:

6

	<i>totinc</i>
Mean	12760.6
Standard Error	641.5926
Median	8640
Mode	0
Standard Deviation	13503.96
Sample Variance	1.82E+08
Kurtosis	8.138731
Skewness	2.204028
Range	97550
Minimum	0
Maximum	97550
Sum	5652946
Count	443



	<p>Frequency Distribution – Species</p> <table border="1"> <thead> <tr> <th>Ethnic</th><th>Frequency</th><th>Percentage</th></tr> </thead> <tbody> <tr> <td>Australian</td><td>286</td><td>64.71%</td></tr> <tr> <td>Northern Europe</td><td>96</td><td>21.72%</td></tr> <tr> <td>Southern Europe</td><td>38</td><td>8.60%</td></tr> <tr> <td>Other</td><td>22</td><td>4.98%</td></tr> <tr> <td>Total</td><td>442</td><td></td></tr> </tbody> </table> <p>Explain the output of the finding.</p>	Ethnic	Frequency	Percentage	Australian	286	64.71%	Northern Europe	96	21.72%	Southern Europe	38	8.60%	Other	22	4.98%	Total	442		
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c)	<p>In order to determine whether the proportion of Australian Red Handfish who are living with safe life was decreased from 0.65, we perform one proportion z test.</p> <p>$\mu = 12$ and $\sigma = 6.2$</p>	2																		
d)	<p>Here, we wish to determine whether the average years of Australian Red Handfish differ significantly from 10.8 and therefore, we use single mean z test to test the claim.</p> <p>$\mu = 8$ and $\sigma = 1.5$</p>	2																		
2	<p>You are researching which type of fish feed and aquarium density produces the greatest fish fly yield in a field experiment. You assign different plots in a field to a combination of fish feed type (1, 2, or 3) and aquarium density (1=low density, 2=high density), and measure the final fish fly yield in g at harvest time.</p>																			
a)	<p>State your hypothesis.</p>	2																		
b)	<p>Which statistical test will you apply? Why.</p>	2																		
c)	<p>Please perform the statistical test as suggested in (b) for data attached.</p>	8																		

	<p>Final fish fly yield (g)</p> <p>Type of fish feed used (type 1, 2, or 3)</p> <p>Aquarium density (1=low density, 2=high density)</p> <p>Block in the field (1, 2, 3, 4).</p>	
d)	State your conclusion of this study.	3