

Hypothesis Test for the PMCC

Solutions

1.

H_0	$\rho = 0$
H_1	$\rho \neq 0$

2	Tailed
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5	% significance level
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Test Statistic	0.9975
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Critical Value	± 0.6319
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Test Statistic	>	Critical Value
Hence we	REJECT	H_0
Therefore there is	Significant evidence to suggest there is a (positive) association between the level of supplement and shell hardness.	

2.

H_0	$\rho = 0$
H_1	$\rho > 0$

1	tailed
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5	% significance level
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Test Statistic	0.7868
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Critical Value	+0.4575
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Test Statistic		>	Critical Value
Hence we	REJECT		H ₀
Therefore there is	Significant evidence to suggest there is a positive association		
between the body and heart mass of the male mice			

3.

H_0	$\rho = 0$
H_1	$\rho \neq 0$

2	tailed
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5	% significance level
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Test Statistic	0.7837
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Critical Value	± 0.6319
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Test Statistic		>	Critical Value	
Hence we		REJECT		H ₀
Therefore there is	Significant evidence to suggest there is a (positive) association			
between the inflation rate and the unemployment rate				

4.

H_0	$\rho = 0$
H_1	$\rho \neq 0$

2	tailed
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5	% significance level
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Test Statistic	0.6105
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Critical Value	± 0.5140
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Test Statistic	>	Critical Value
Hence we	REJECT	H_0
Therefore there is	Significant evidence to suggest there is a (positive) association between the number produced and the average quality score	

5.

a.

H_0	$\rho = 0$	
H_1	$\rho \neq 0$	
2	Tailed	
5	% significance level	
Test Statistic	-0.1180	
Critical Value	± 0.6319	
Test Statistic	>	Critical Value
Hence we	ACCEPT	H_0
Therefore there is	No significant evidence to suggest there is an association	
between the drug absorption on day 1 and day 2		

b.

i. Patient 7 (8.7, 84.3)

ii.

Test Statistic	+0.863		
Critical Value	±0.6319		
Test Statistic		>	Critical Value
Hence we	REJECT		H ₀
Therefore there is	Significant evidence to suggest there is an association		
between the drug absorption on day 1 and day 2			

6.

a. -0.9442

b.

H_0	$\rho = 0$			
H_1	$\rho \neq 0$			
2	Tailed			
5	% significance level			
Test Statistic	-0.9442			
Critical Value	± 0.5140			
Test Statistic		<	Critical Value	
Hence we		REJECT		H_0
Therefore there is		significant evidence to suggest there is an association		
between mid-temperature and latitude				