	Group A : Control *existing landing page*	Group B: Treatment *landing page with food & drink*		
Question 1:Average (Mean)	**3.374518468**	**3.390866946**		
Question 2 and 3: CI for each group				
Standard deviation	25.93639056	25.4141096		
Count/sample size	24343	24600		
Standard error	0.166235008	0.162034445	= stdev/SQRT(sample size)	
degree of freedom	24342	24599	=sample size-1	
T Critical value	1.960061445	1.960060427	=T.INV.2T(0.05, degrees of freedom)	
The Margin of Error	0.325830829	0.317597303	=T critical value * Standard Error	
Confidence Intervals(lower)	**3.048687639**	**3.073269643**	=mean - margin of error	
Confidence Intervals(lower)	**3.700349297**	**3.708464249**	=mean+ margin of error	
Question 4: p-value				
Null hypothesis: whether there is a difference in the average amount spent per user between the two groups.				
Significance level: 5%	0.05			
p-value	**0.943855753**		=T.TEST(range1, range2, tails, type)	
If the p-value is greater than or equal to the significance level, you fail to reject the null hypothesis.				
Option D: p = 0.944, statistically insignificant. We fail to reject the null hypothesis that there is no difference in the mean amount spent per user between the control and treatment.				
Question 5: CI for Diff of Means(treatment-control) with t distribution				
Sample statistic	0.016348478		=treatment mean - control mean	
Standard deviation	25.93639056	25.4141096		
Count/sample size	24343	24600		
Standard Error	0.232140559		SE = sqrt(s1^2 / n1 + s2^2 / n2)	
degree of freedom(for all users)	48942			
T Critical value	-1.960012457		=T.INV(0.05, degrees of freedom)	
The Margin of Error	-0.454998387		=T critical value * Standard Error	
Confidence Interval (lower)	0.471346865		=sample statistic - margin of error	
	-0.438649909		=sample statistic+ margin of error	
Question 6: User conversion rate				
No. of conversions	955	1139		
Total No. of users	24343	24600		
Conversion Rate	**3.923099043**	**4.630081301**	Conversion Rate = (Number of Conversions / Total Number of Users) * 100	
Conversion Rate(in decimal)	0.03923099	0.046300813		
Standard error	0.001244334	0.001339777	Standard Error = sqrt((Conversion Rate * (1 - Conversion Rate)) / Total Number of Users)	
Question 7 and 8: 95% confidence interval for user conversion rate				
Confidence Interval (lower)	**0.036792095**	**0.04367485**	Confidence Interval = Conversion Rate ± (Critical Value * Standard Error)	
Confidence Interval (lower)	**0.041669886**	**0.048926776**		
Question 9: Hypothesis test for difference in proportion				
pooled proportion	0.042784464		(converted_usersA+converted usersB)/(sample_sizeA+sample_sizeB)	Pooled proportion (p) = (Number of conversions (control) + Number of conversions (treatment)) / (Total number of users (control) + Total number of users (treatment))
standard error	0.001829526		Standard Error = sqrt((pooled proportion * (1 - pooled proportion)*(1/sample_size A+1/sample_sizeB)	Standard error (SE) = sqrt(p * (1 - p) * (1 / Total number of users (control) + 1 / Total number of users (treatment)))
Z-score	3.86429177		(convertion rate B-convertion rate A)/standard error	
p value	**0.000111412**		p-value = 2 * (1 - NORM.S.DIST(3.864, TRUE))	
To conduct a hypothesis test to determine if there is a difference in the conversion rate between the two groups, we can use a two-sample two-sided z-test with a significance level of 5%.				
The null hypothesis (H0) states that there is no difference in the user conversion rate between the control and treatment groups, while the alternative hypothesis (Ha) suggests that there is a difference.				
The p-value associated with a z-score of 3.86429177 is approximately 0.000111412 (or 0.011% when expressed as a percentage). This value is less than the significance level of 0.05 (5%).				
Therefore, the correct answer is:				
B) p = 0.0001, statistically significant. We reject the null hypothesis that there is no difference in the user conversion rate between the control and treatment.				
The p-value of 0.000111412 provides strong evidence to suggest that there is a significant difference in the conversion rate between the control and treatment groups. Therefore, we reject the null hypothesis and conclude that there is a statistically significant difference in the user conversion rate between the two groups.				
Question 10: Confidence Interval for difference in proportion				
No. of conversions	955	1139		
Total No. of users	24343	24600		
Conversion Rate	3.923099043	4.630081301		
Conversion Rate(in decimal)	0.03923099	0.046300813		
standard error	0.001829526			
T Critical value	-1.96		Using a z-score of approximately 1.96 for a 95% confidence interval:	
The Margin of Error	-0.003585871		=T critical value * Standard Error	
Confidence Interval	**0.010655694**	**0.003483951**	Lower bound = (Conversion rate (treatment) - Conversion rate (control)) - Margin of error, Upper bound = (Conversion rate (treatment) - Conversion rate (control)) + Margin of error	