

**KING FAHD UNIVERSITY OF PETROLEUM & MINERALS**  
**DEPARTMENT OF MATHEMATICAL SCIENCES**  
**DHAHRAN, SAUDI ARABIA**

**STAT 212: BUSINESS STATISTICS II**

Semester 061

Second Major Exam **B** (SOLUTIONS)

Tuesday November 7, 2006

6:00 pm – 7:15 pm

Please **circle** your instructor's name:

Marwan Al-Momani  
Raid Anabosi

Name:

ID#:

Section:

Serial:

Question No	Full Marks	Marks Obtained
1	10	
2	10	
3	13	
4	12	
<b>Total</b>	<b>45</b>	

1B \*Solutions\*

**Q1.** Media Matrix and Jupiter Communications gathered data on the time adults and the time teens spend online during a month. The study concluded that on average, adults spend more time online than teens. Assume that a follow-up study sampled 25 adults and 31 teens. The standard deviations of the time online during a month were 94 minutes for adults and 58 minutes for teens. Do the sample results support the conclusion that adults have greater variation in online time than teens? Use a 1% significance level.

The hypotheses: $H_0$ :	$H_A$ :
The assumptions:	
<p>The test statistic:</p> <p style="text-align: center; font-size: 1.5em;">See Q2 in form A</p>	
The critical value:	
The decision rule & decision:	
The conclusion:	

Q2. A sample of eight earnings per share estimates for 1998 is shown below:

Company	AT&T	Caterpillar	Kodak	Exxon	hp	IBM	McDonalds	Wal-Mart
Estimated Earnings per Share	2.92	4.65	4.27	3.09	3.57	7.04	2.64	1.74

Based on 10% significance level, do the data provide sufficient evidence to conclude that the standard deviation, in the earnings per share estimates, exceeds 1.5?

The hypotheses: $H_0$ :	$H_A$ :
The assumption:	
The test statistic:	
See Q1 in form A	
The critical value:	
The decision rule & decision:	
The conclusion:	

3B \* Solutions \*

Q3. A study of educational levels of voters and their political party affiliations yielded the following results:

Party Affiliation	Educational Level		
	Less than High School	High School Degree	College Degree
Democratic	40	30	30
Republican	20	35	45

Using a 5% level of significance, do you think that the Educational Level and the Party Affiliation are not related to each other?

The hypotheses:  $H_0$ :

$H_A$ :

The assumption:

The test statistic:

See Q4 in form A

The critical value:

The decision rule & decision:

The conclusion:

Q4. Consumer panel preferences for three proposed displays follow:

Display type	A	B	C
Number of preferences	43	53	39

Test that there are no differences in the preferences among the three types of displays, using a 2.5% level of significance.

The hypotheses:  $H_0$ :

$H_A$ :

The assumption:

The test statistic:

See Q3 in form A

The critical value:

The decision rule & decision:

The conclusion:

*With Our Best Wishes*