

**MIDTERM (FORM II)**  
**PSYCHOLOGY 3000-090, 091**  
**U-ONLINE**

**Thursday, June 29, 2000 — Saturday, July 1, 2000**  
**Tracey Smith and Melissa Hawkins**

DATE: \_\_\_\_\_  
STUDENT NAME: \_\_\_\_\_  
U OF U ID. #: \_\_\_\_\_  
SIGNATURE \_\_\_\_\_

**TIME LIMIT: 2 HOURS**

START TIME: \_\_\_\_\_ END TIME: \_\_\_\_\_

PROCTOR SIGNATURE: \_\_\_\_\_

**THE FOLLOWING CONDITIONS APPLY:**

**Check all that apply:**

- Calculators O.K.**  
 **Open Book (any book)**  
 **Dictionaries O.K.**  
 **Notes O.K.**  
 **Other: Homework and  
Assignments**

**Write exam answers on:**

- Blue Book, Exam, or notebook paper**  
 **Scantron**

# PSYCHOLOGY 3000-090, 091 (Form II)

## M I D T E R M E X A M

*Read each question carefully before you answer. Clearly write your answers on the back of the following pages, or use notebook paper or a blue book. Work at a steady pace, and you should have ample time to finish. Make sure your name is on this exam, blue book, or notebook paper before you turn in the exam.*

1. A psychologist believes that greater impulsivity in adolescents is related to more severe substance abuse. She randomly selects 10 substance abusers from the local drug court and gives them a measure of temperamental impulsivity and rates them on the severity of their substance abuse problem (a composite score based on chronicity of use, amount of substance used, and interference with functioning). Higher scores indicate more impulsivity or greater severity. The data are:

Substance Abuser	Impulsivity (X)	Severity of Substance Abuse (Y)
A	45	25
B	35	10
C	40	25
D	25	5
E	35	15
F	35	10
G	37	25
H	30	5
I	30	5
J	42	20

*Make sure that you show all your steps and calculations so we can give partial credit where appropriate.*

- (a) Construct a scatterplot, make sure you label the axes. (5).
- (b) Describe the relationship between impulsivity and severity of substance abuse (*i.e.* is it curvilinear, inverse, negative?) (5).

- (c) Determine the correlation between impulsivity and severity of substance abuse (20).
- (d) Based on visual inspection of your scatterplot, does the data contain any outliers? Describe how an outlier can effect the Pearson r and give an example. (10)?
- (e) Determine the regression equation for predicting severity of substance abuse from degree of impulsivity (10).
- (f) Draw the regression line on the scatterplot you already constructed (5).
- (g) Using the regression equation you just calculated, what would your predict a substance abuser's score would be on the severity of substance abuse composite if he/she had an impulsivity score of 23 (10)
- (h) Calculate the Prediction Error Variance (the long way, not using r). That is, fill out the table below and calculate the variance of the errors (15).

<b>Substance Abuser</b>	<b>Impulsivity (X)</b>	<b>Severity of Substance Abuse (Y)</b>	<b>Y=</b>	<b>e</b>	<b>e<sup>2</sup></b>
<b>A</b>	45	25			
<b>B</b>	35	10			
<b>C</b>	40	25			
<b>D</b>	25	5			
<b>E</b>	35	15			
<b>F</b>	35	10			
<b>G</b>	37	25			
<b>H</b>	30	5			
<b>I</b>	30	5			
<b>J</b>	42	20			

- 2. a) A standard deck is shuffled and a card is drawn and noted. The card is replaced in the deck and then the cards are reshuffled. A second card is selected from the deck and noted. What is the probability of a black card on the first draw and a red king on the second draw (10)?
- b) An instructor develops a 6 question true-false quiz for her introductory psychology course. If a student had never come to class or done the reading what would be the probability of her getting a 100% on the quiz just by guessing alone (10)

**END OF EXAM** *(written 6/*