

Name: \_\_\_\_\_  
Date: \_\_\_\_\_

### Unit 9 and 10 Quiz

Answer the following questions. **Show your work (or explain your calculations).**

1. We took a random sample of eleven Biology students and recorded the following values for the percentage grade on Test 1 and the percentage grade on the Midterm exam. The data is given below.

Grade on Test 1	Grade on Midterm Exam
78	83
75	75
53	48
65	72
81	85
74	75
74	69
77	80
71	48
39	23
94	92

- a) Calculate and interpret the correlation between Grade on Test 1 and Grade on the Midterm Exam.
- b) Determine the linear regression equation to predict Midterm Exam Grades based on the Test 1 Grades.
- c) Use your equation from part (b) to predict the Midterm Exam Grade for a student who received an 85 on Test 1.

2. Sales (\$) for a sports store for several months are shown below. Use the data to forecast the sales for months 5, 6, 7 and 8 using a 4-month Moving Average.

Month	Sales (Actual)	Forecasted Sales (4 month Moving Average)
1	12,300	
2	9,090	
3	8,890	
4	11,400	
5	20,100	
6	17,810	
7	14,630	
8	13,000	

3. Sales for a particular product at a beauty store have gone down recently (data is shown in the table below). Initially they predicted to have \$640 in the first month. Use exponential smoothing with a weight of  $\alpha = 0.25$  to forecast sales for months 2 through 5.

Month	Sales (Actual)	Forecasted Sales ( $\alpha = 0.25$ )
1	600	640 (Initial Prediction)
2	550	
3	510	
4	405	
5	380	